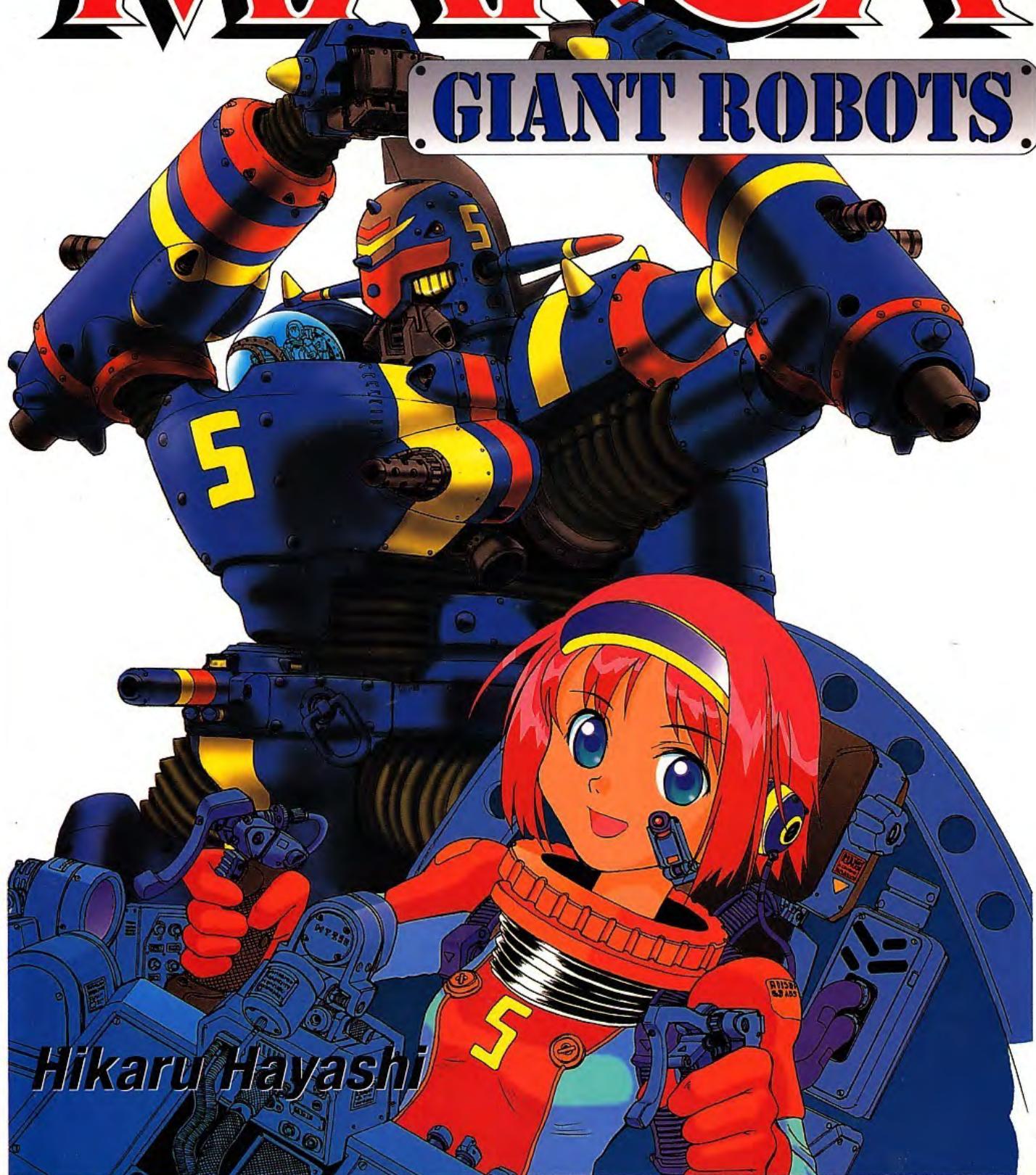


# HOW TO DRAW

SPECIAL  
EDITION

# MAANGA

## GIANT ROBOTS



*Hikaru Hayashi*

**HOW TO DRAW**   
**MANGA**

**GIANT ROBOTS**

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by Hikaru Hayashi, Go Office

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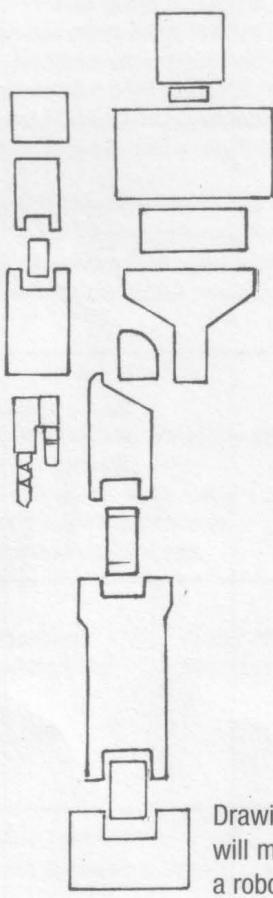
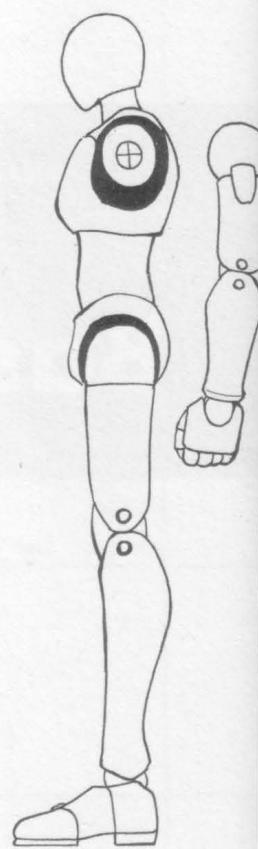
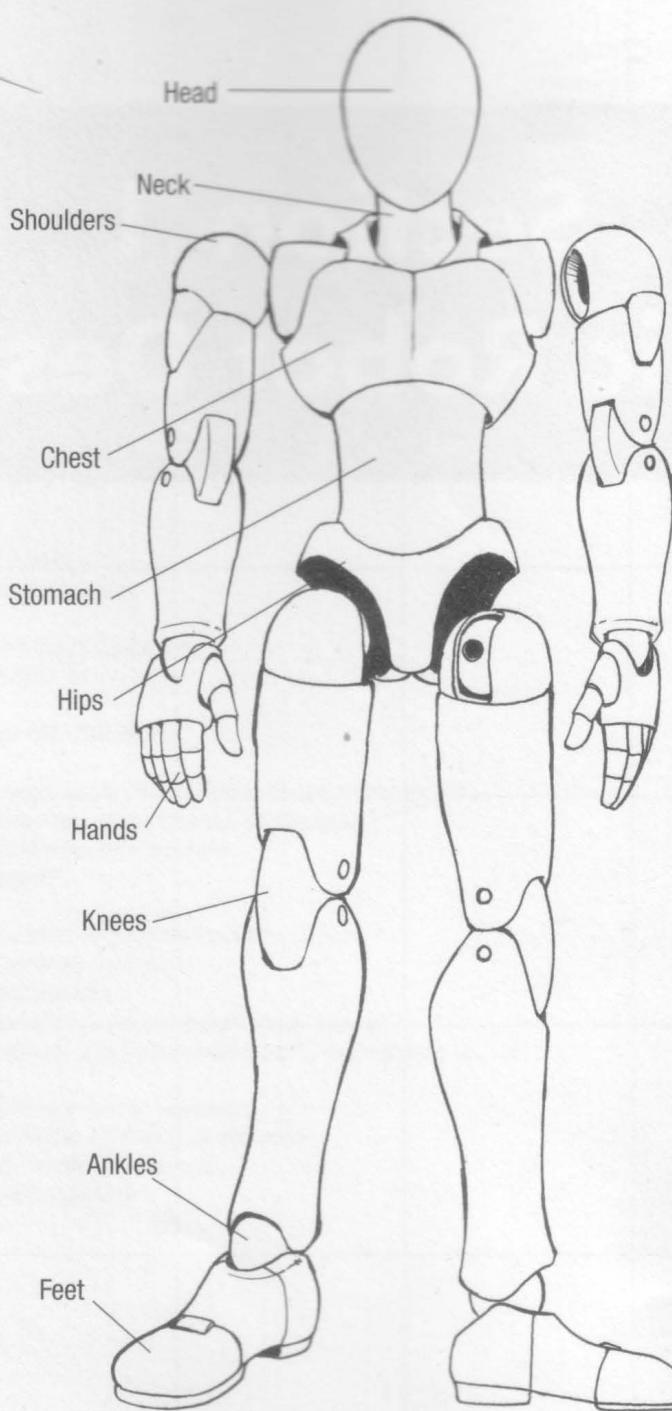
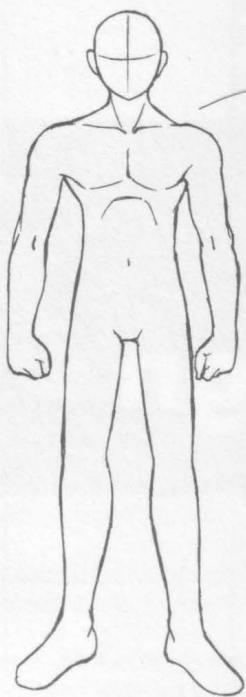
# **Section 1**

# **Basic Robot Design**

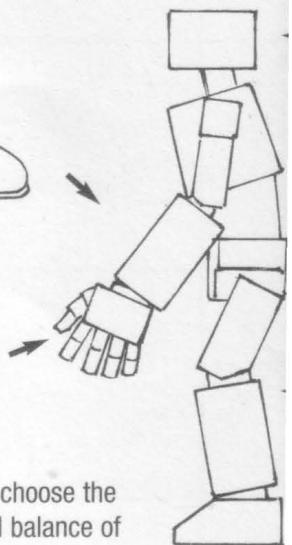
# Full Body

## Start with a Human-shaped Figure

Think of the parts of the body when drawing.



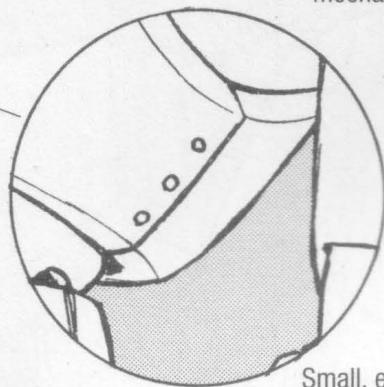
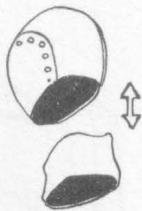
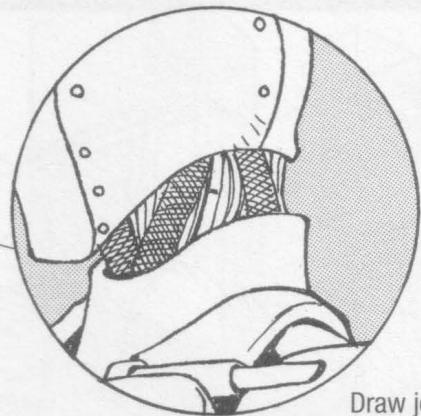
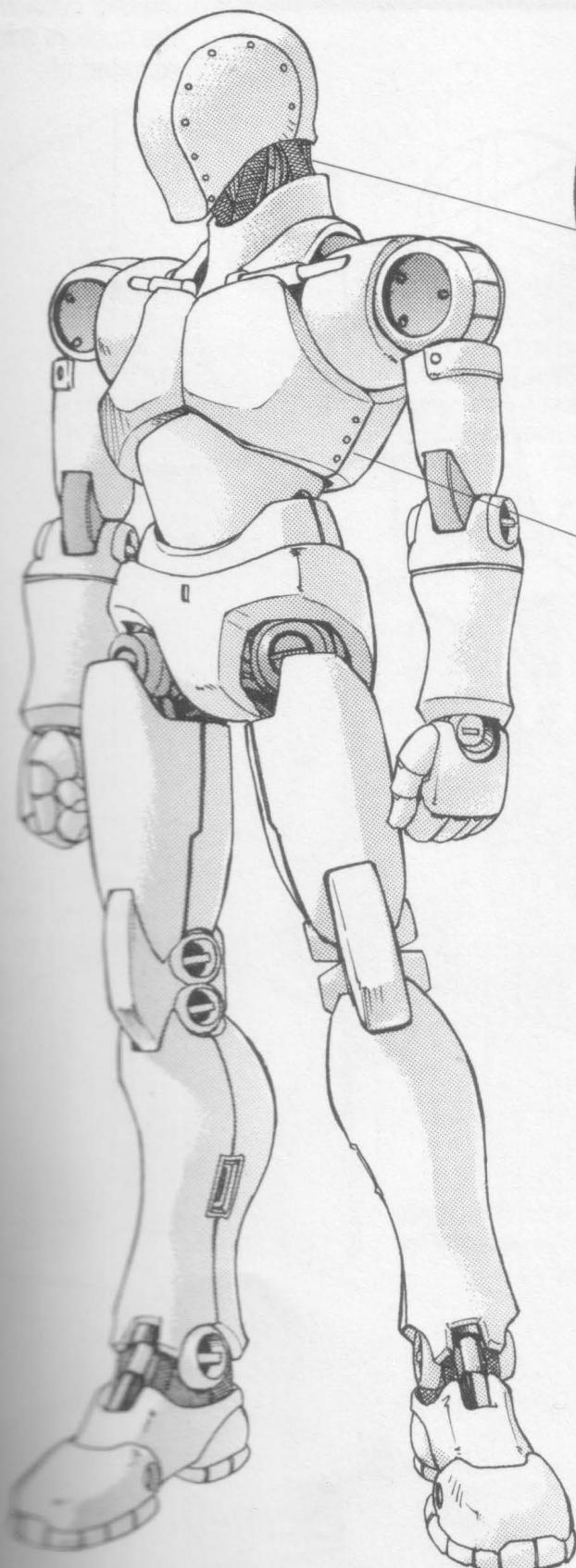
Drawing squarish parts will make it look more like a robot, i.e., man-made.



You are free to choose the size, shape and balance of the parts.

## Draw Robot-like Figures Using Only Basic Parts.

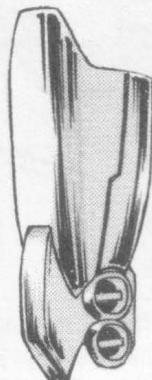
- Draw big, bold joints.
- Give the surface a strong metallic contrast.



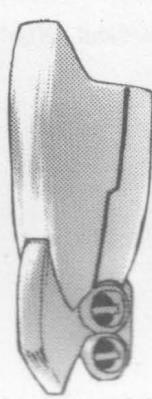
Draw joints in a way that makes it look like there are mechanical parts inside.

Small, evenly spaced circles resemble rivets.

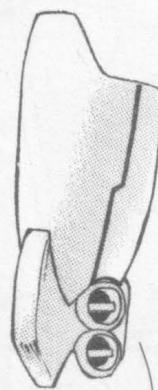
### Representation of metallic finish



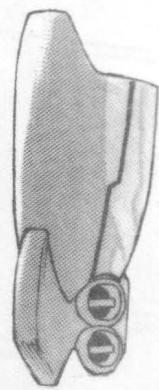
Solid  
(emphasize shadows)



Light representation



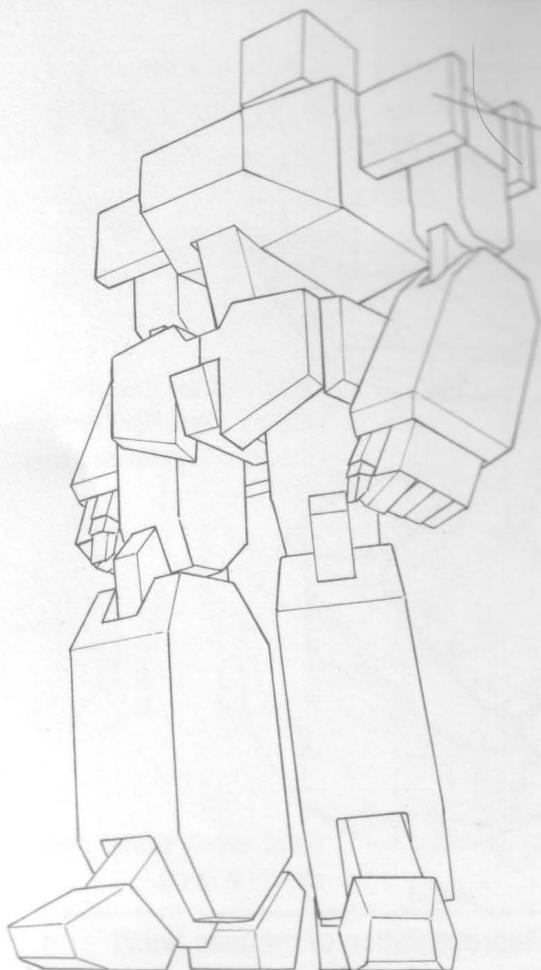
Gradation



Reflection

## Full Body Robots Comprised of Parts with Straight Lines

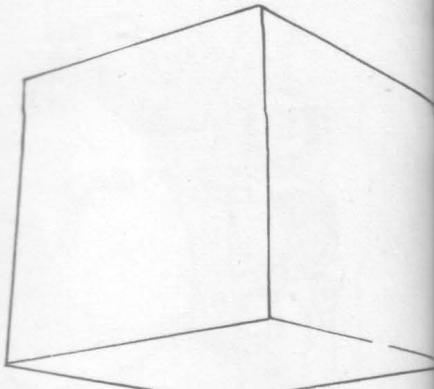
A square part becomes a metallic looking cube when the corners are rounded off.



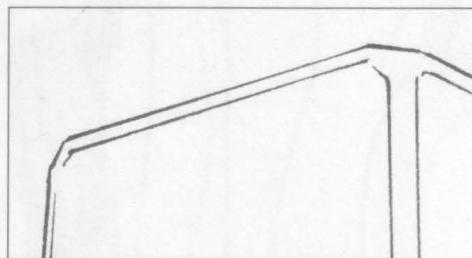
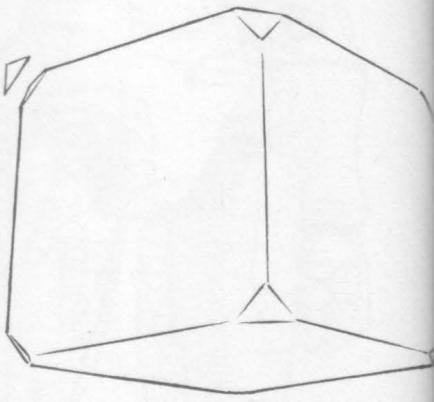
Robot without corners cut off



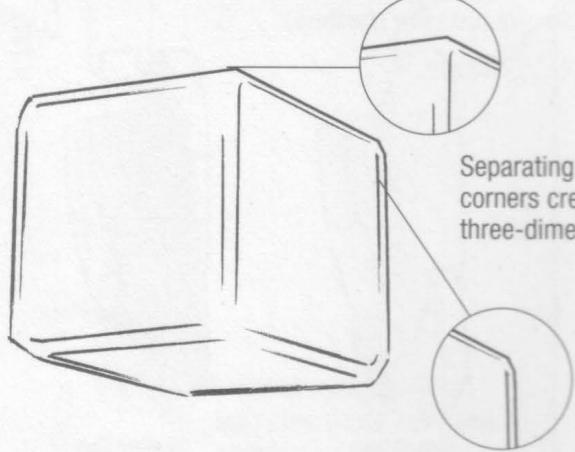
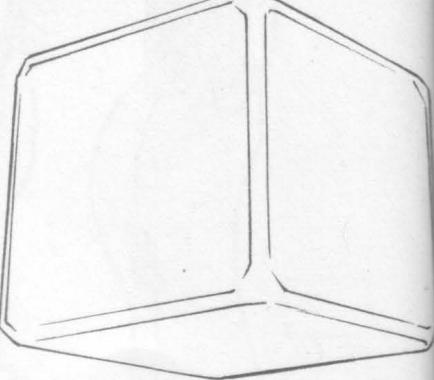
Drawing the edge lines narrower than the contour lines creates a three-dimensional effect.



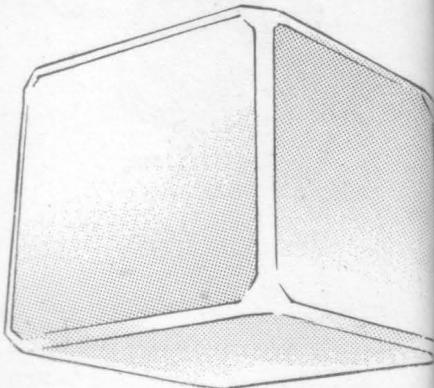
Cut diagonally.



Then draw dual contour lines. They should be close together. This helps represent the shine of a smooth metallic edge.

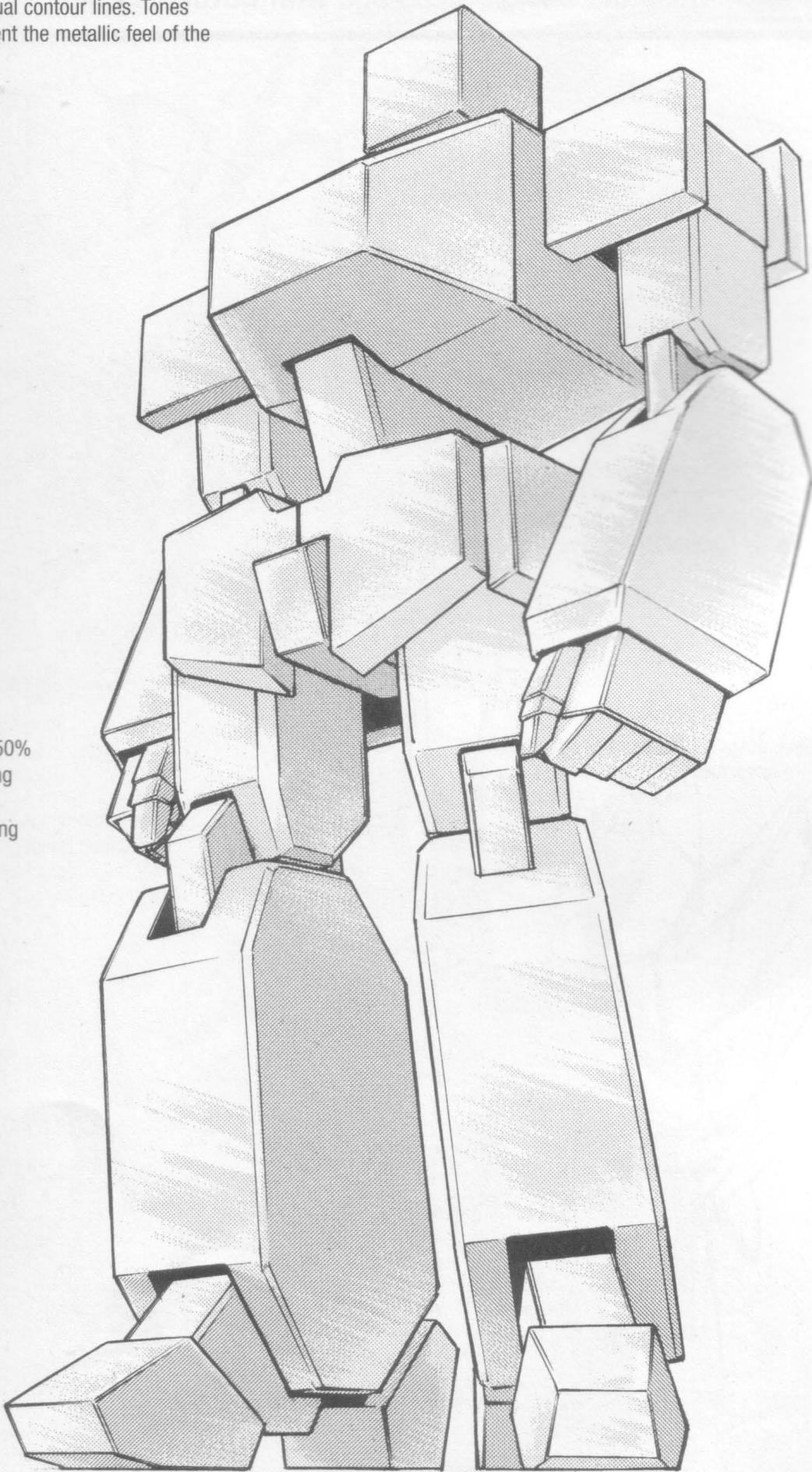


Separating the lines at the corners creates the same three-dimensional effect.



Example of finished block. Apply tone and plane.

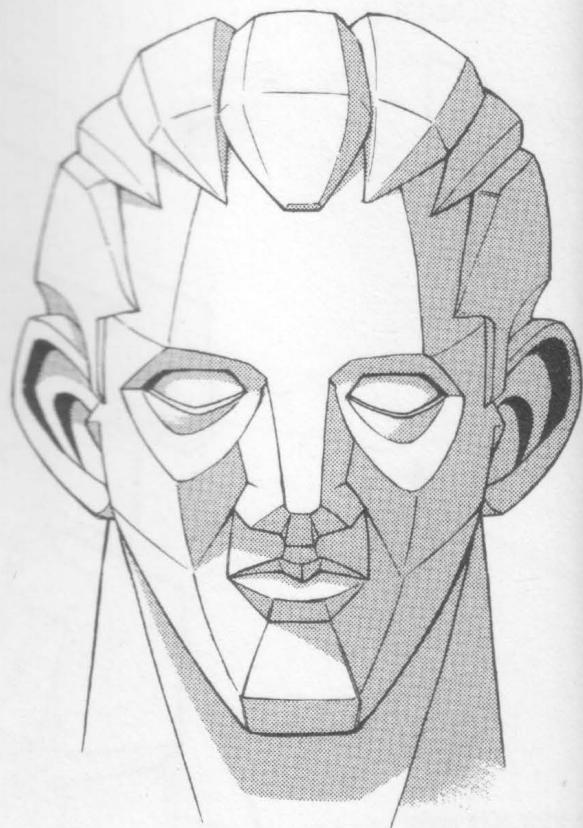
This robot was drawn by selectively removing corners and using dual contour lines. Tones were applied to accent the metallic feel of the surface.



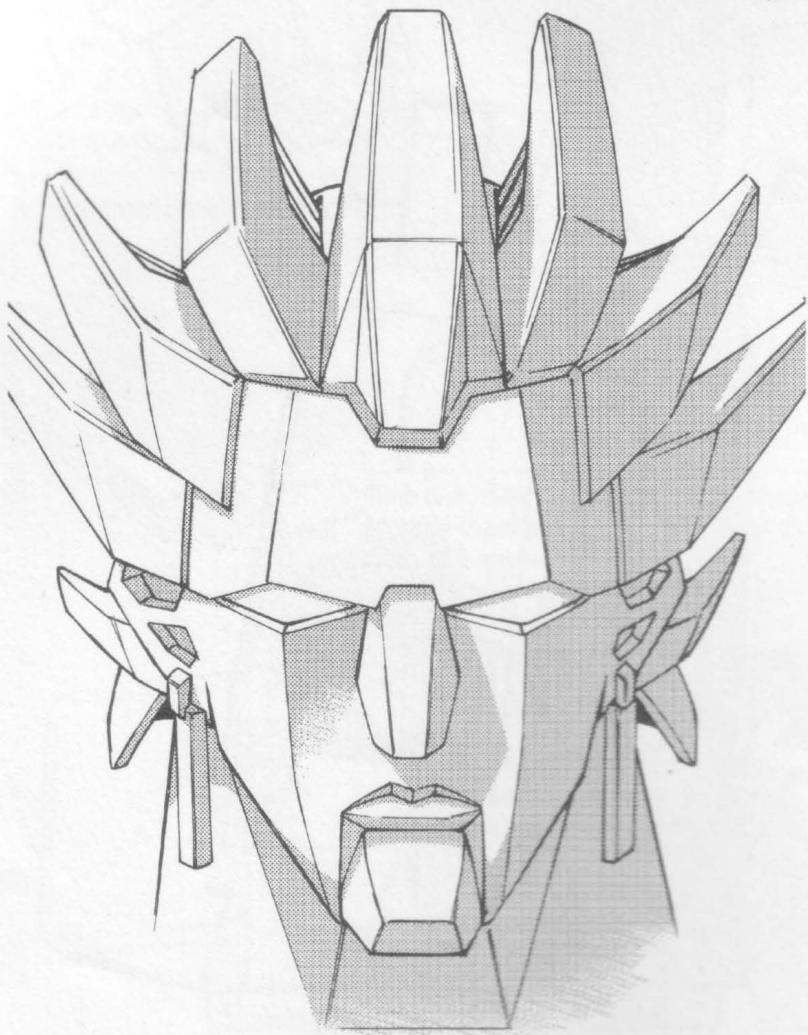
The trick is to apply tones to only about 50% of the surface, leaving the other half white, thus creating a shining effect.

## Head

### Base the Design on a Face with Beveled Edges

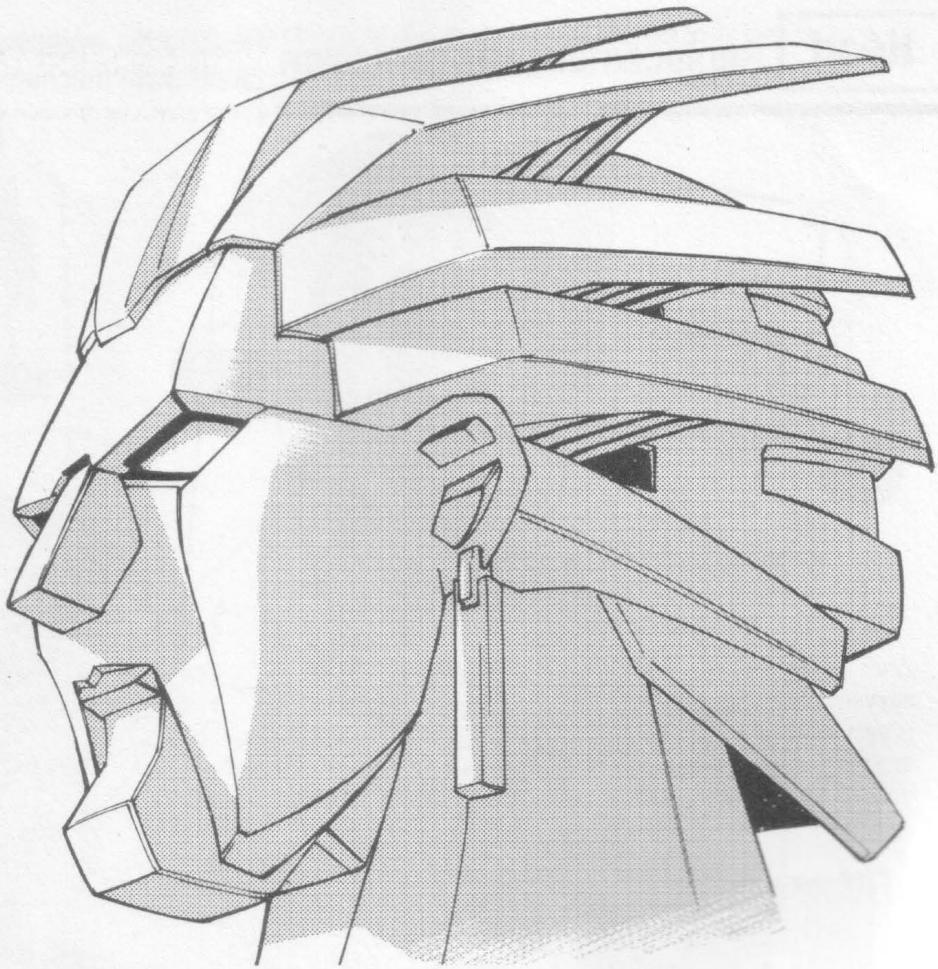


Since a beveled image simplifies the unevenness of the face/head and is blockish, it is easy to apply this effect to a robot head by making the lines sharp and giving it a metallic quality.



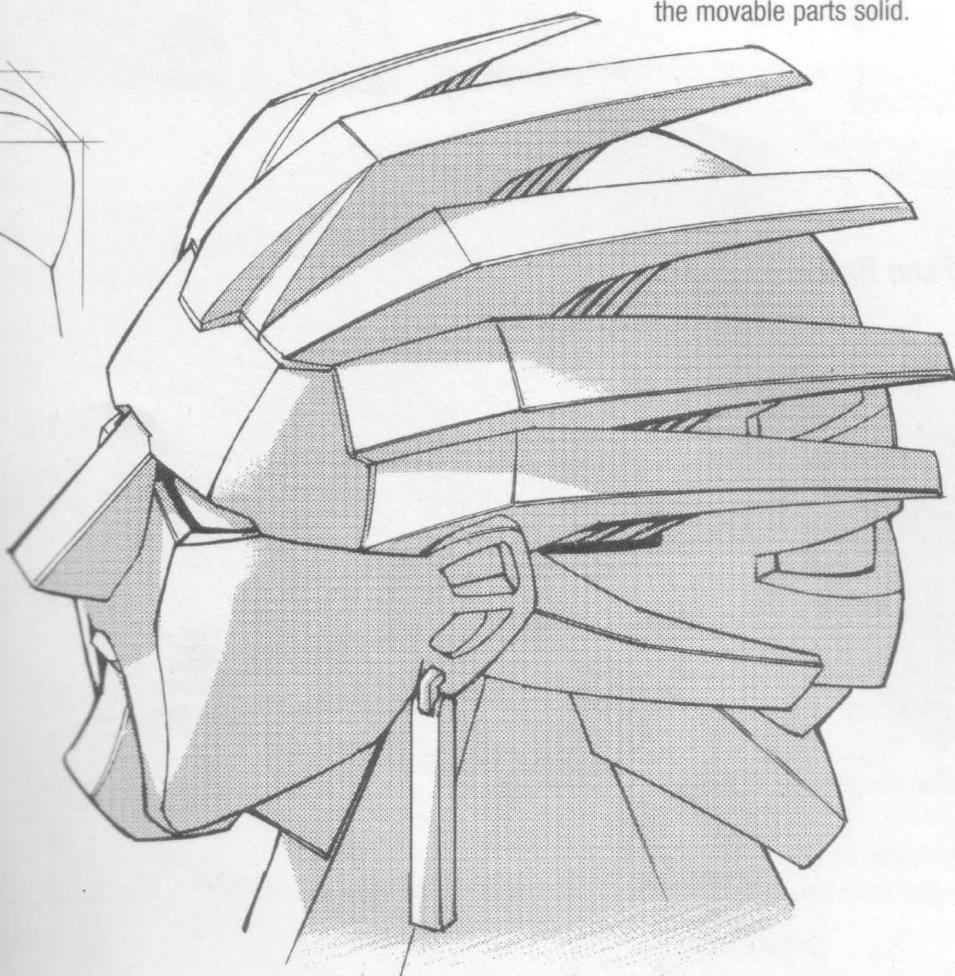
You can effectively express a metal-like cubic effect by using double lines for the edges of the part of the head signifying the hair.





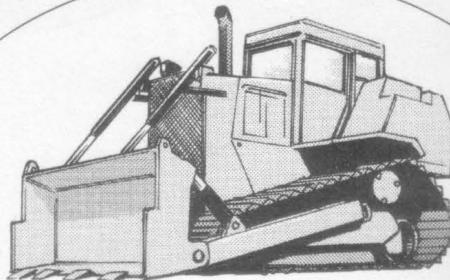
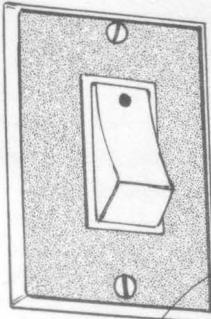
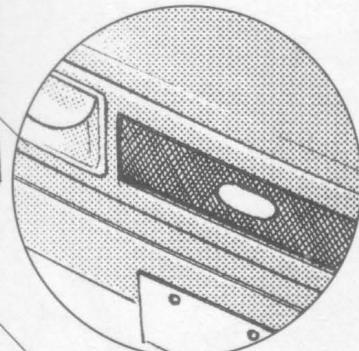
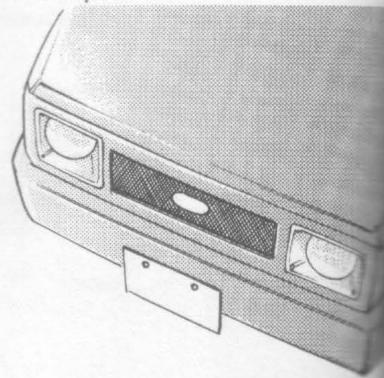
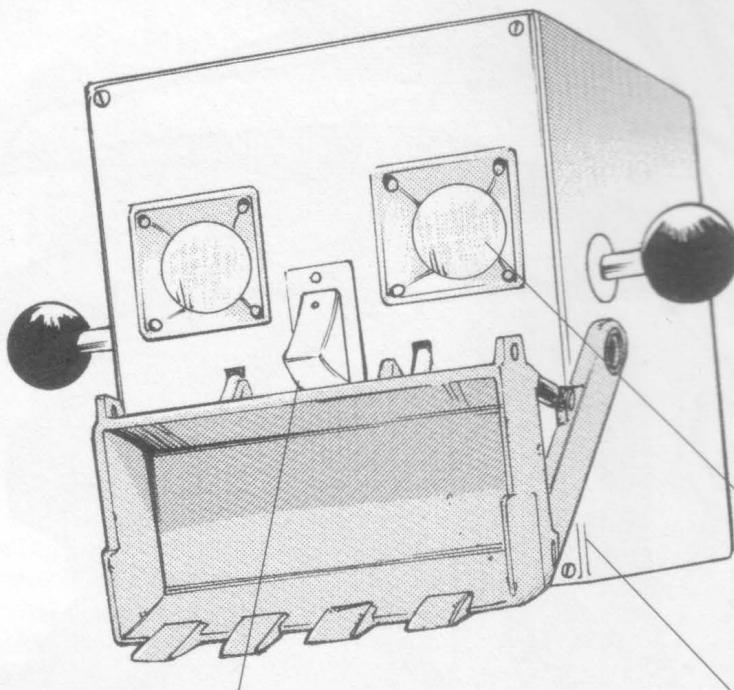
You can make it look like removable armor is covering the face of a robot by making some lines bold and some thin.

Heaviness and a robot-like molded feel are created when you make some of the movable parts solid.

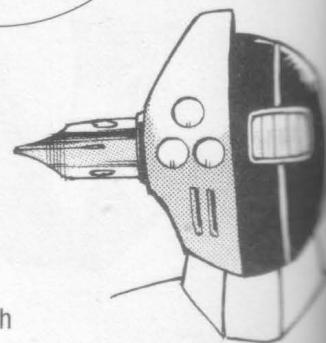
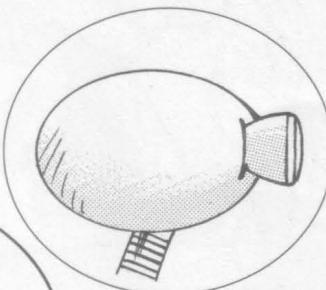
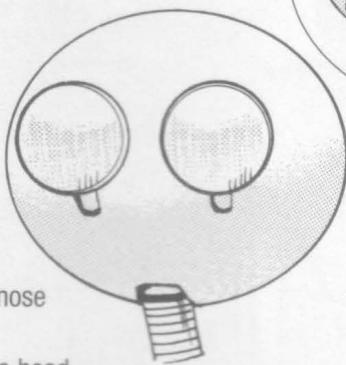
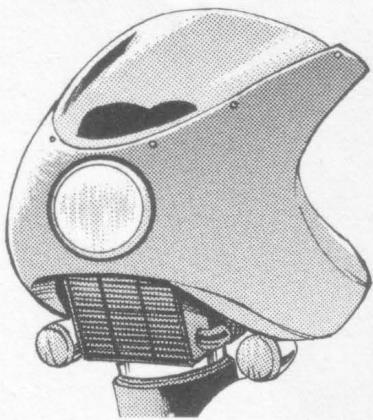


## Head Replacement and Omission

Replace the eyes, ears, nose and mouth with mechanical parts.



### Omission of Face Parts



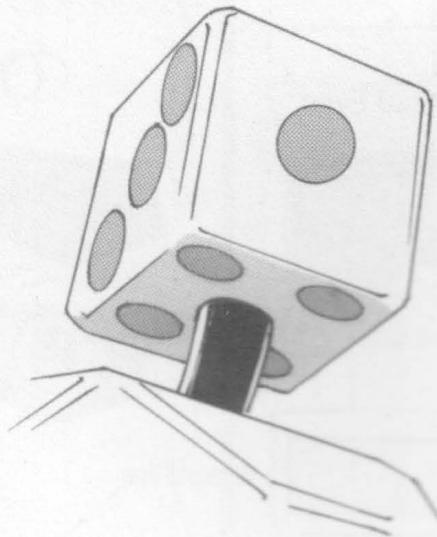
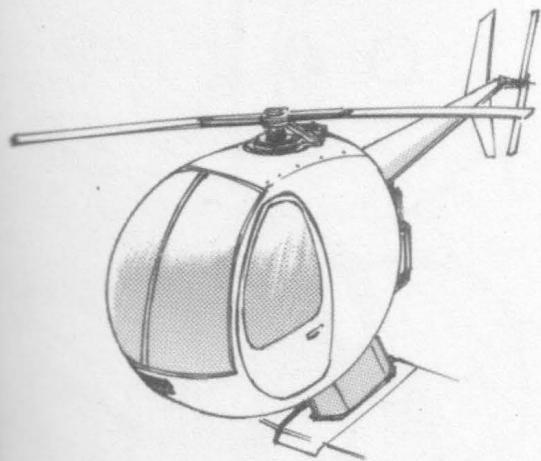
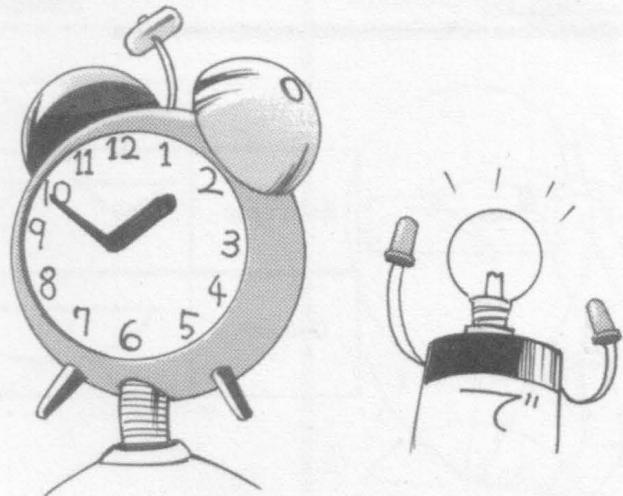
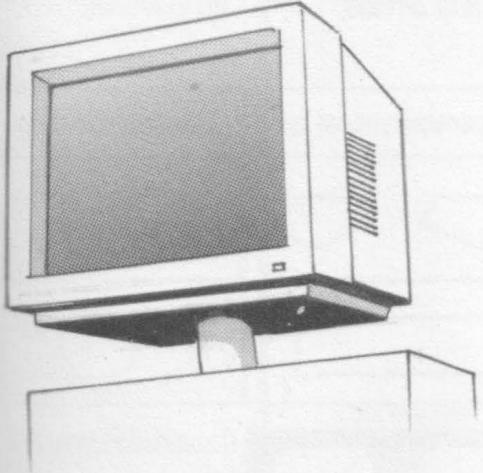
Omission of one eye and the nose

You are free to choose the shape of the head.  
The ears, nose and mouth are often omitted.

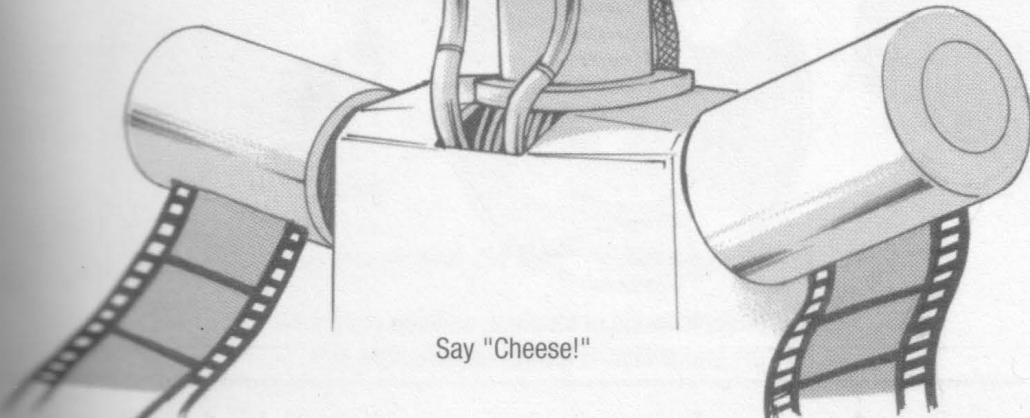
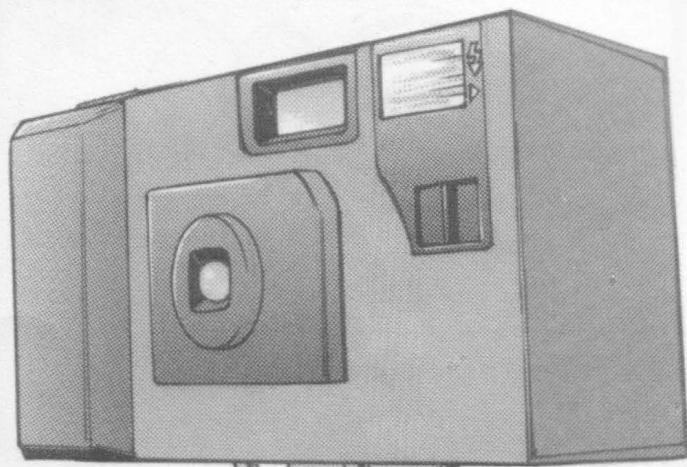
Omission of the nose and mouth

## Replacement of the Head Itself

Use everyday objects to give your robot an unexpectedly familiar face.



You can also make a non-mechanical object look like a head.

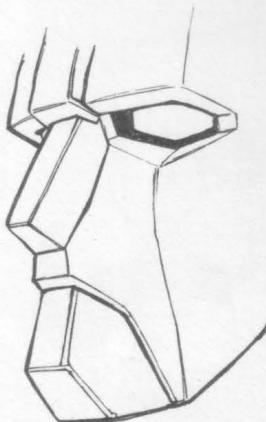


Say "Cheese!"

# Head

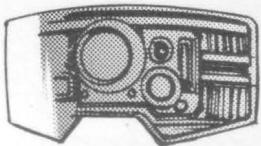
## Eye Shape and Size

The eyes are based on three basic shapes:  
triangles, squares and circles.

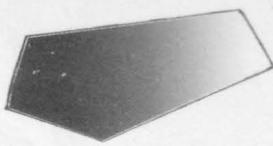


|           | Triangular/crescent type | Square/polygonal type | Round/oval type          |
|-----------|--------------------------|-----------------------|--------------------------|
| Both eyes |                          |                       |                          |
| One eye   |                          |                       |                          |
|           |                          |                       | Combination/Goggles type |

### Mechanical Eyes



Goggles type



Straight line

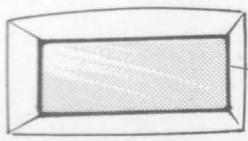
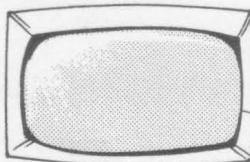
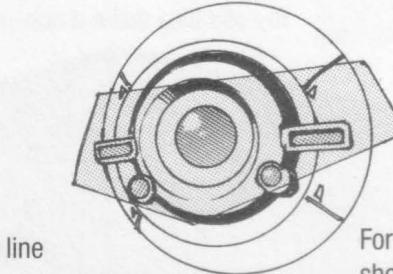


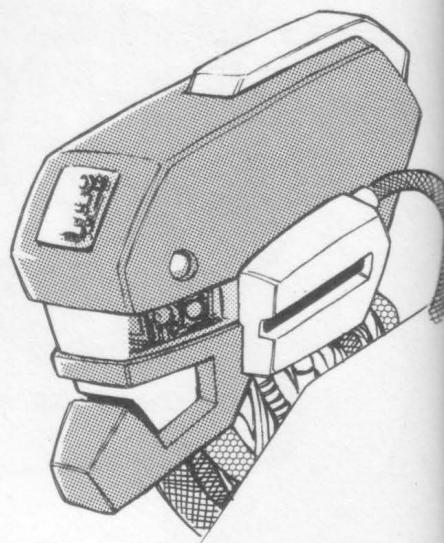
Plate glass type



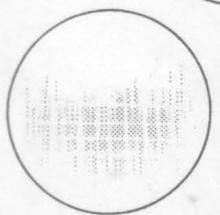
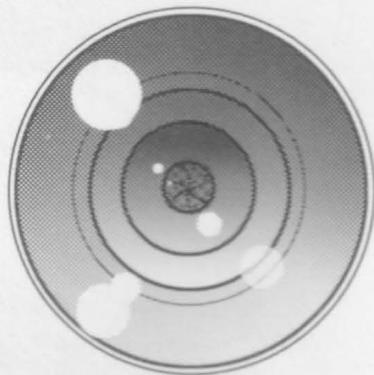
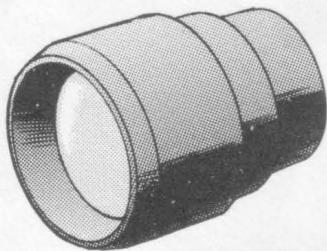
Curved line



For the round-lens type, you should draw an entire eyeball.

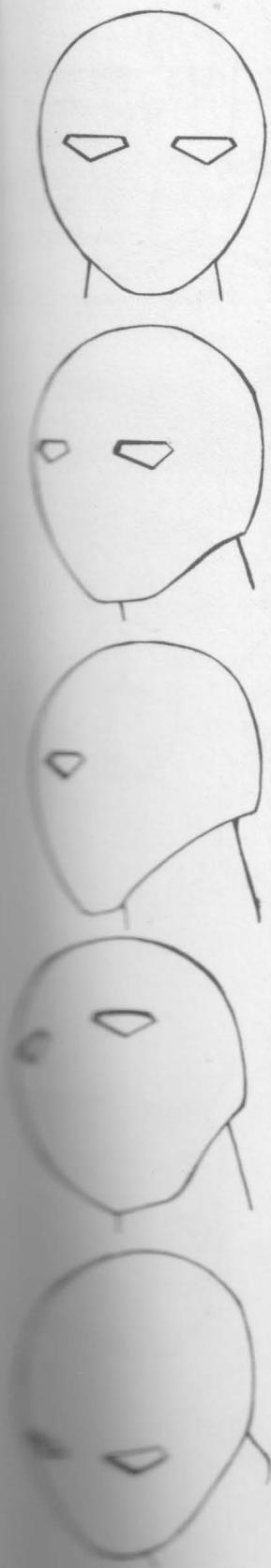


Camera lenses and headlights can be used for mechanical eyes.

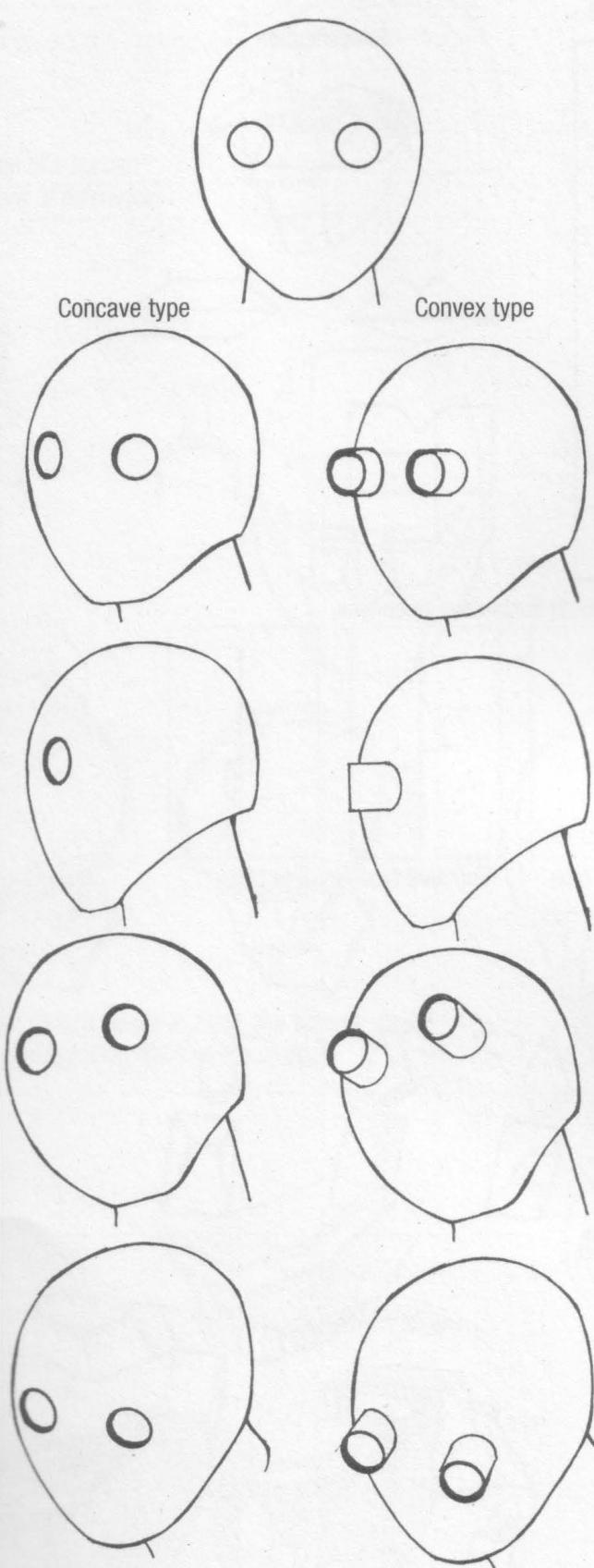


Use of multiple levels of tone and addition of light will create the impression of a three-dimensional lens.

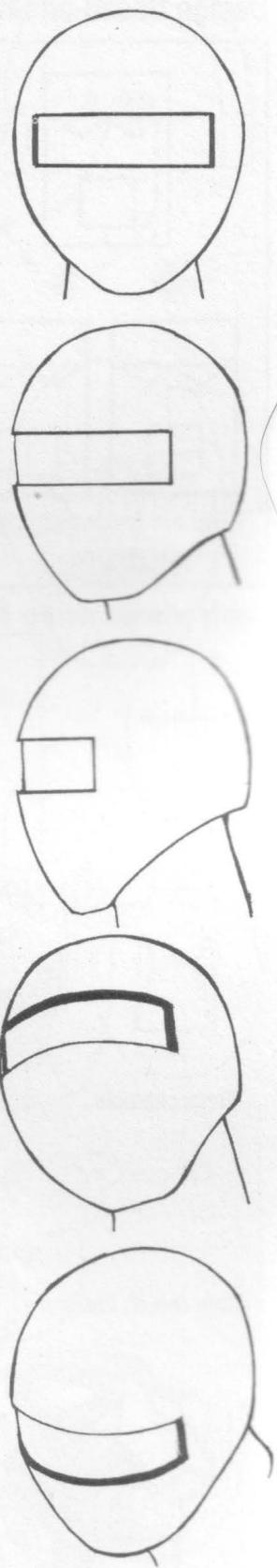
Polygonal type



Round type



Rectangular type

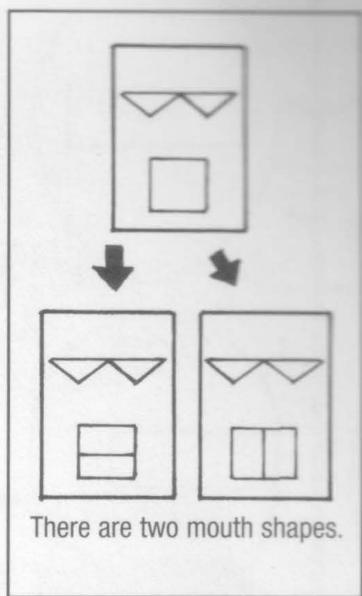


Decide whether the eyes are concave or convex.

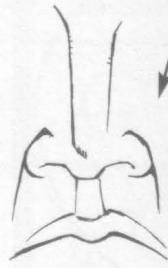
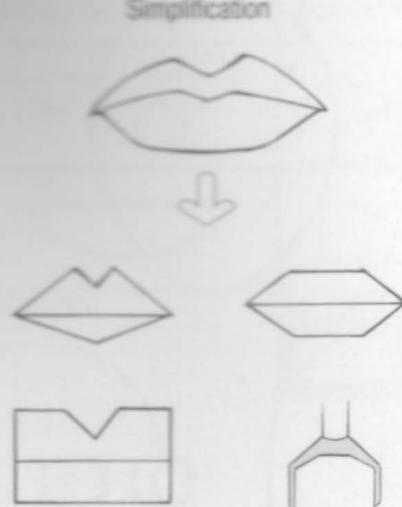
## Head Mouth

There are two general approaches to drawing a robotic mouth: One is to consider the shape formed by the lines that connect the nose and mouth, while the other is to view the mouth in relationship to the overall structure of the head.

### Design Based on Shape

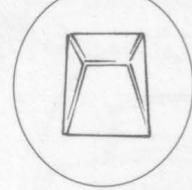
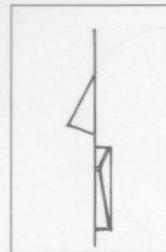
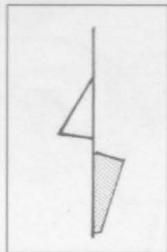
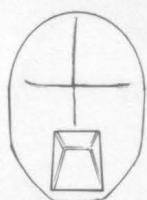


### Simplification

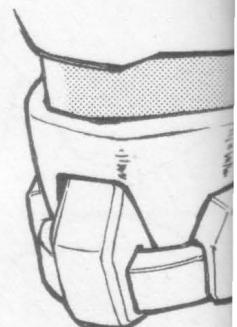
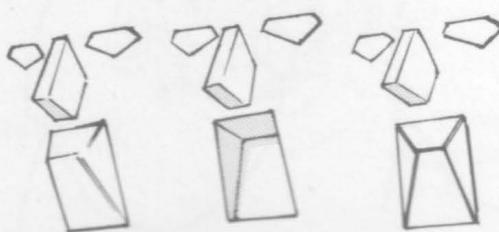


The lines connecting the nose and mouth are key to the design.

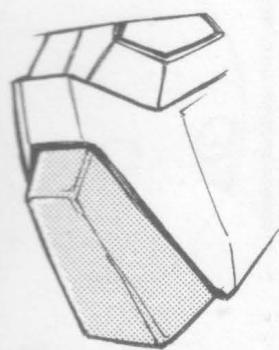
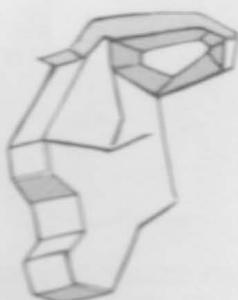
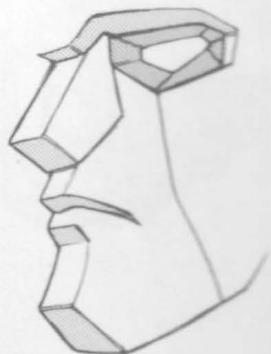
Clearly establish whether the mouth is concave or convex.



Front example



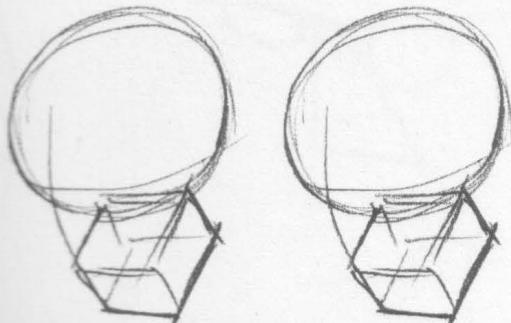
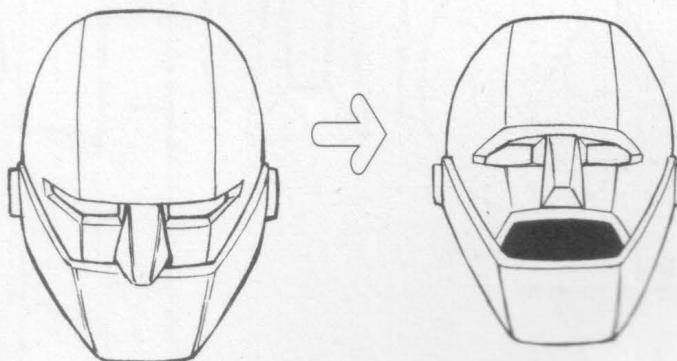
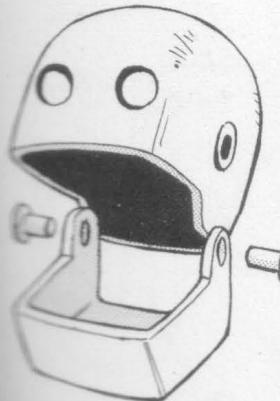
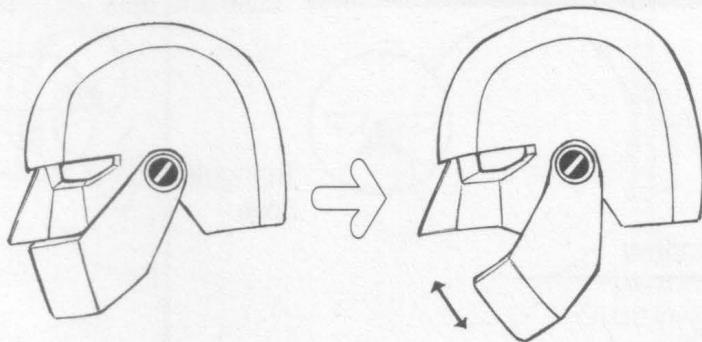
Other mouth designs



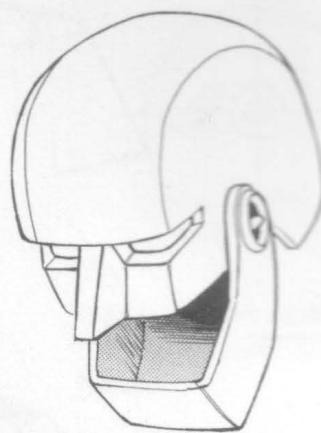
## Design Based on Structure



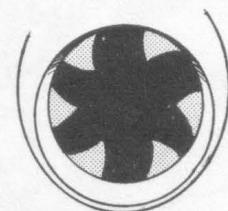
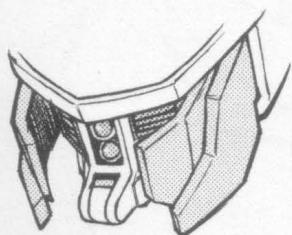
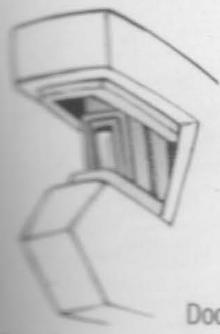
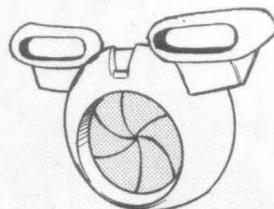
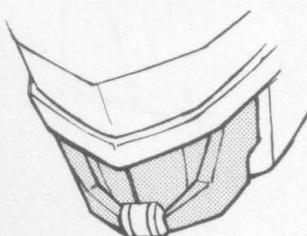
Use the shape of a human skull as a point of reference.



If the robot's mouth is open, the bottom should be shaded to create a sense of depth.



### Door mouth



Door type  
(moves left and right)

Circular shutter type  
(opens and closes like a camera lens)

## Head

### Nose and Ears

Design the nose and ears based on basic beveled shapes. Or, don't draw them at all; professional manga artists often omit the nose and ears altogether.



Triangular nose

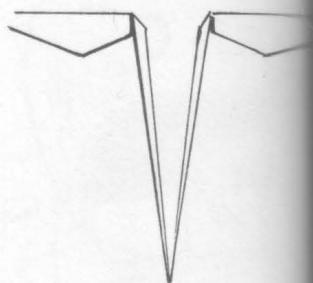
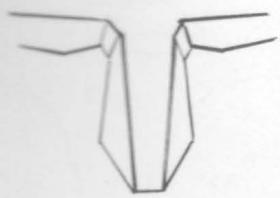
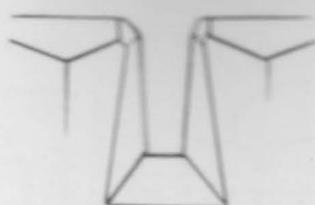


Rectangular nose

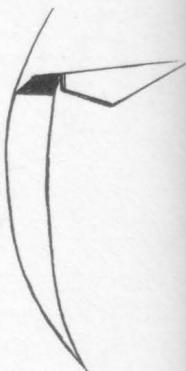
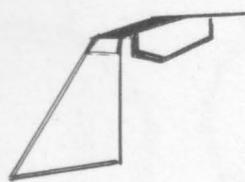


Inverted-triangular nose

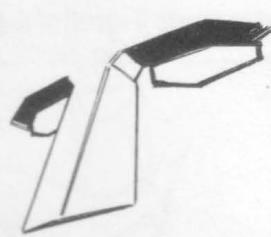
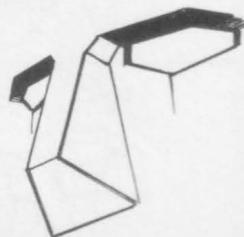
#### Front view



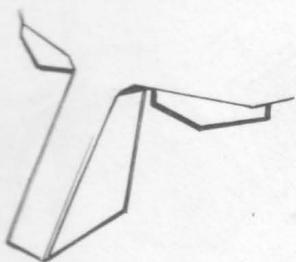
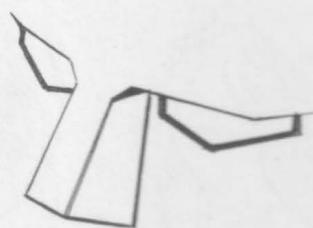
#### Side view

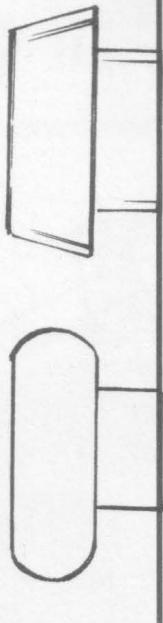
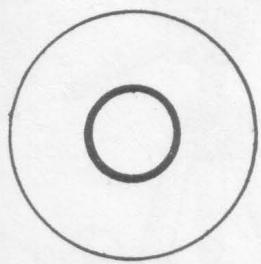
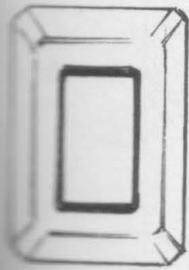
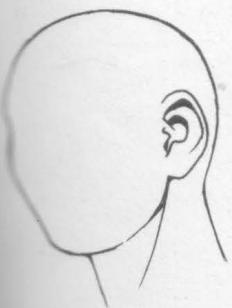


#### Upward view

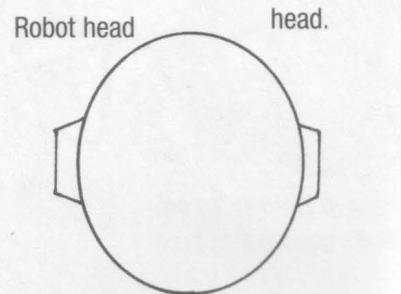
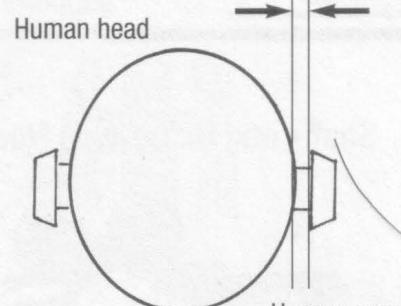


#### Downward view

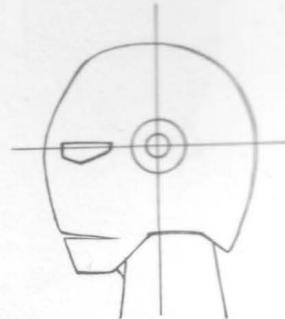




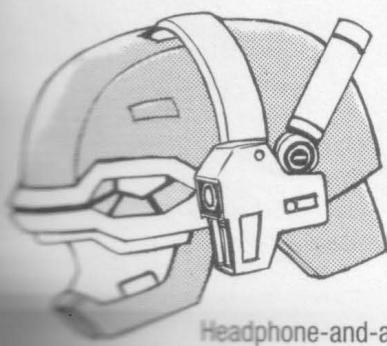
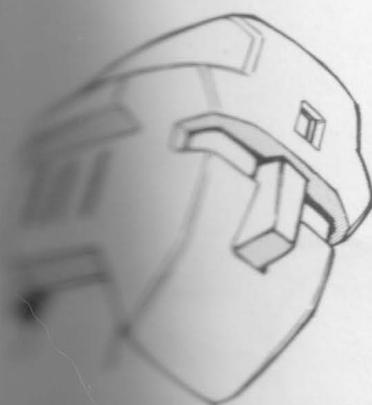
Robot ears are generally rectangular or round. Make them simple.



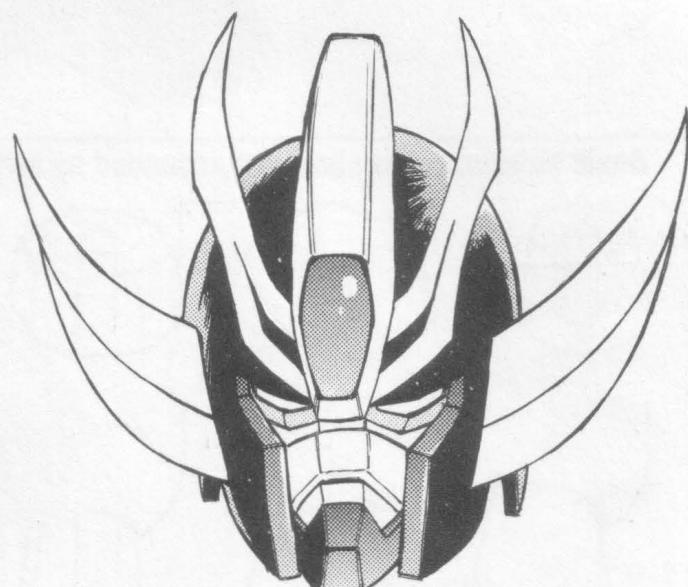
Robot ears are usually molded into the head.



Drawing the ears near the middle of the head will make the robot look human.



Headphone-and-antenna type

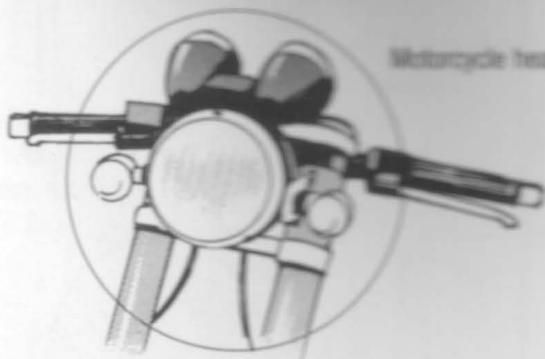


Horn-shaped type

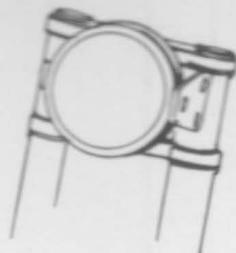
## Head Neck

Think in terms of how the neck supports the head.

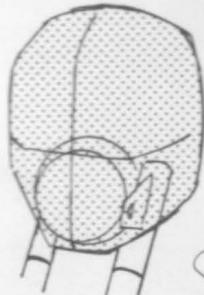
### Shaft- and Hinge-type Necks



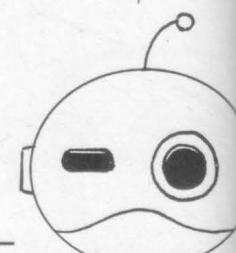
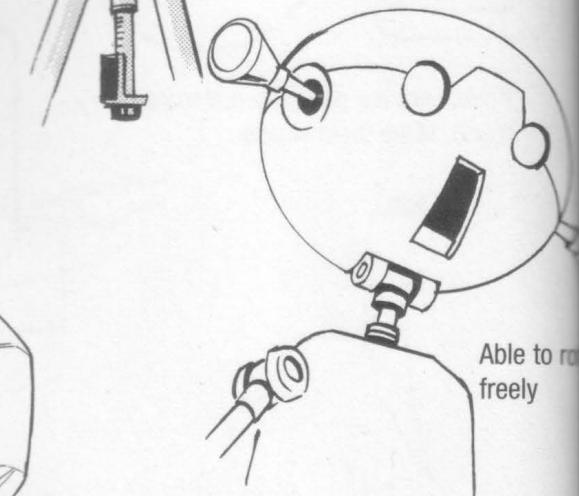
Motorcycle headlight



Camera tripod



Replace headlight with head



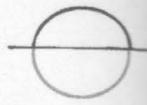
### Three basic neck types



Thick neck

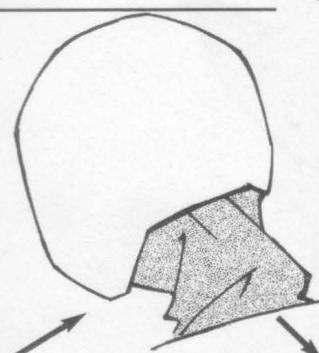
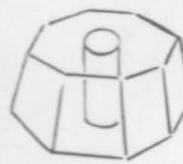
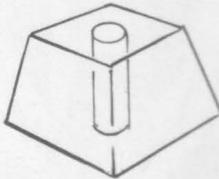
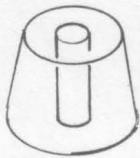


Thin neck

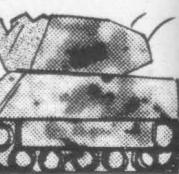


No neck  
(lodged in the body)

### Basic structure: The shaft is surrounded by armor.

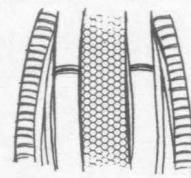
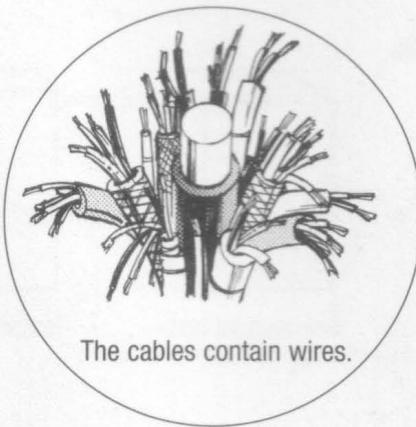
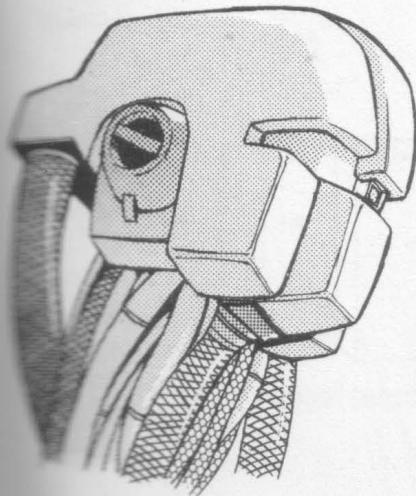


Protective cover used instead of armor



Spring- or accordion-type cover

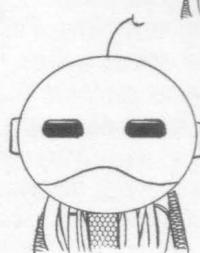
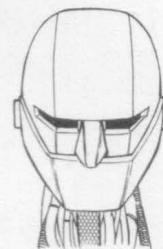
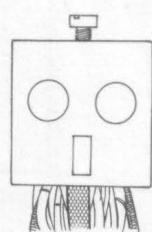
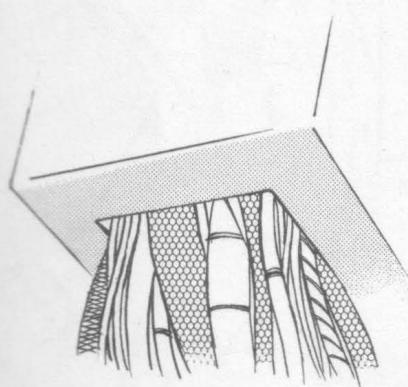
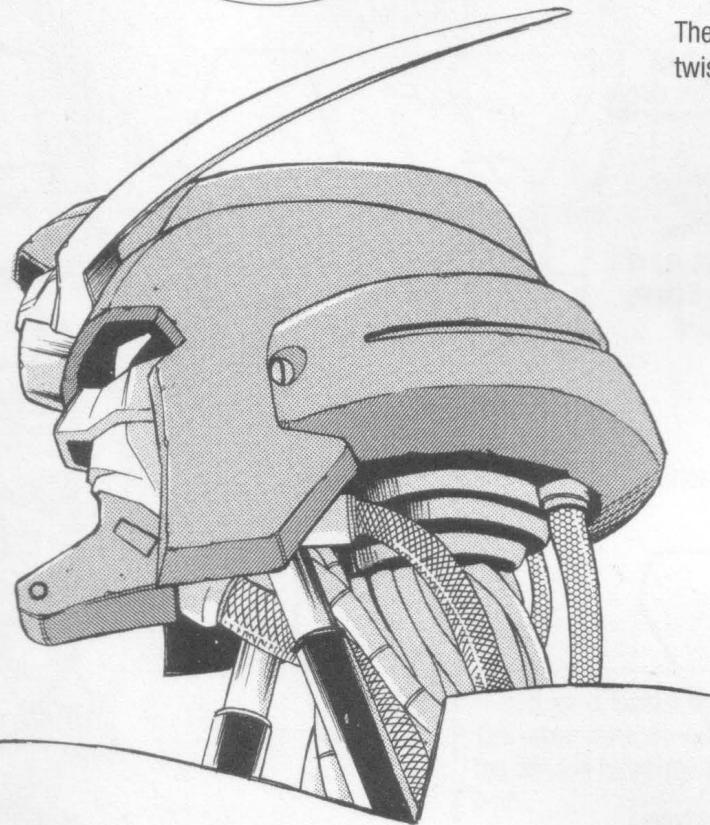
## Cable- and Hose-type Necks



Representing twisting



The cables and hoses  
twist as the head turns.



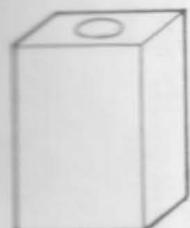
It looks like the robot is in for  
maintenance if you draw cables and  
hoses instead of a neck.

The trunk can be a single part combining the chest, stomach and hips, or two or more separate parts.

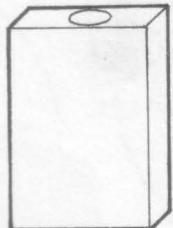
### Single-part type Three basic shapes



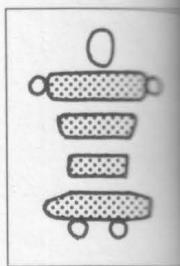
Cylindrical body



Box-shaped body



Board-shaped body

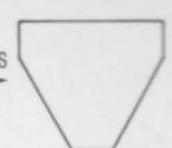


The special "centipede-type" body consists of multiple parts.

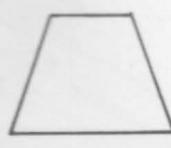
### Two-part type



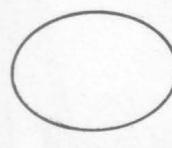
**Chest part**  
Four basic shapes



Inverted triangle



Stand



Oval



Square

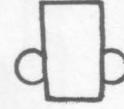
**Hips part**  
Three basic shapes



Briefs type



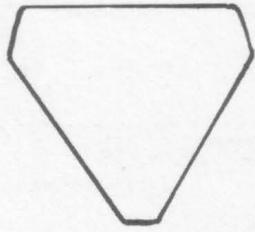
T type



I type

The I type is the skeleton of the briefs type and a simplified version of the T type.

### Chest Patterns

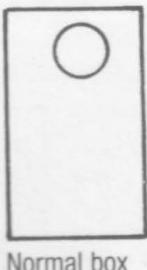
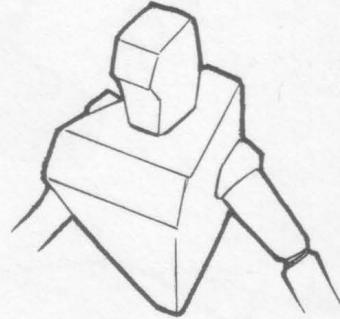


Inverted triangle type

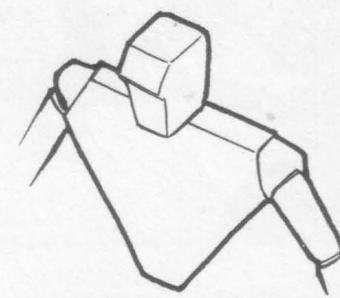
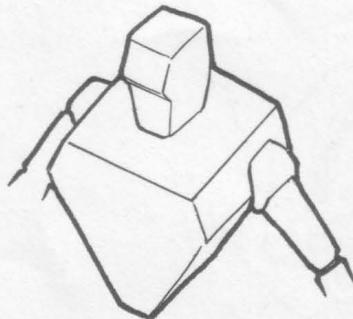
### Side view



Irregular cone



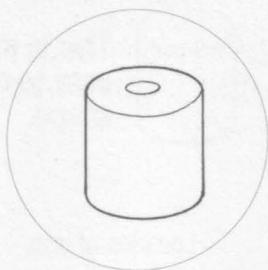
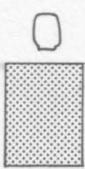
Normal box



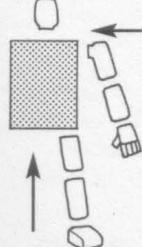
When designing the body of a robot, think about the shape as seen from the side as well as the front. A robot can have a totally different look depending on the thickness even if the design and shape look the same from the front.

## The Art of Design

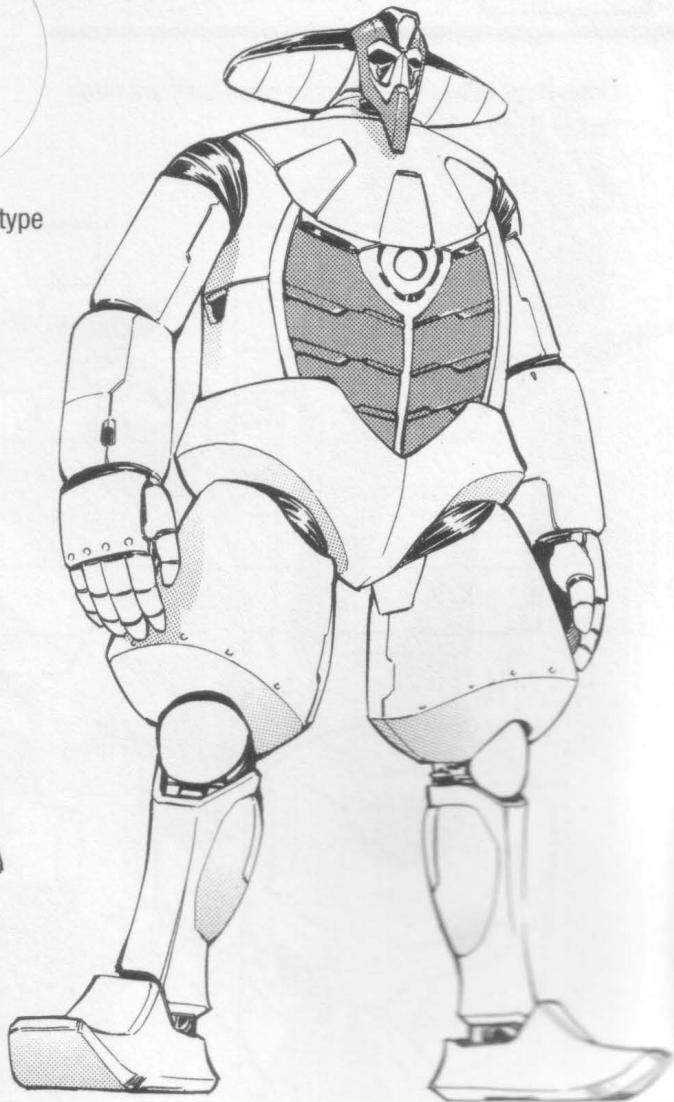
1. Choose body type.



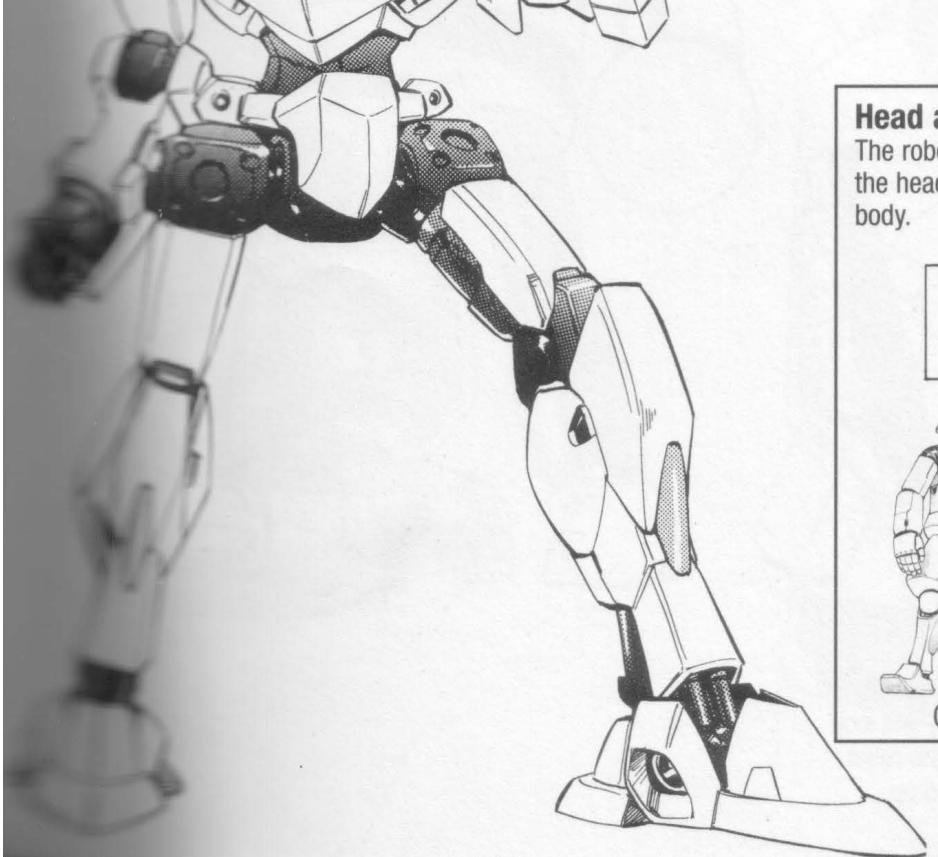
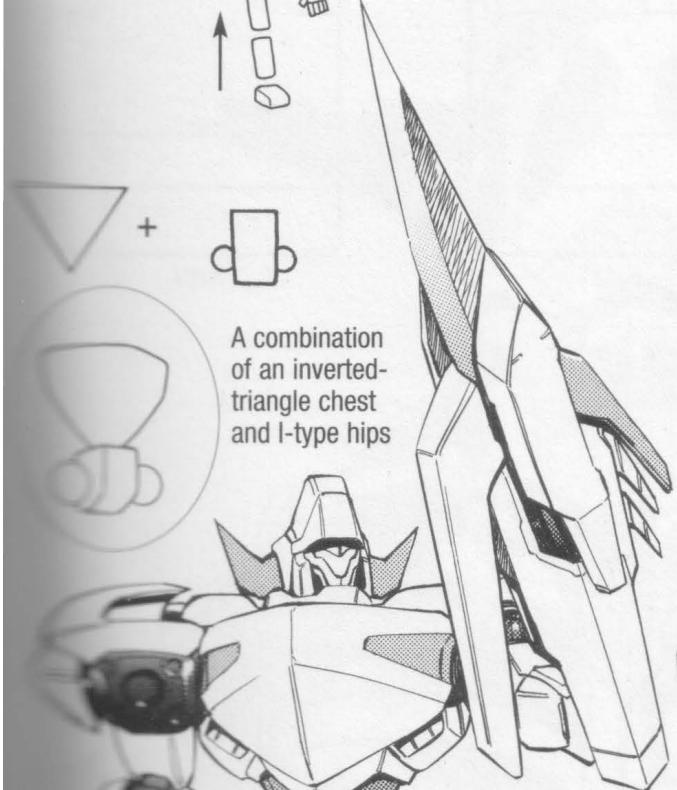
2. Attach arms and legs of your choice.



Cylindrical-body type

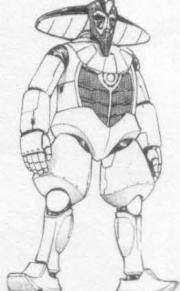
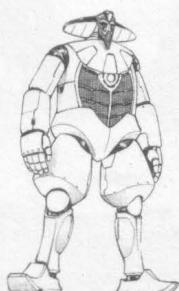
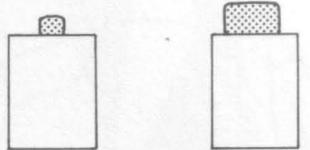


A combination of an inverted-triangle chest and I-type hips



### Head and body balance

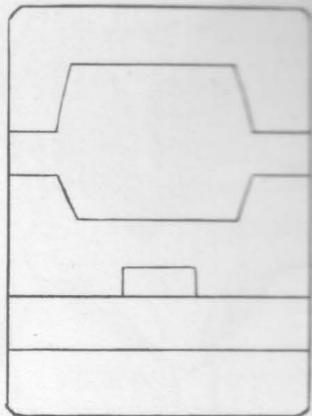
The robot will look more intimidating if the head is relatively smaller to the body.



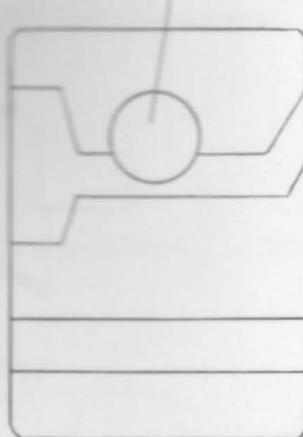
## Trunk Type 1: Cylindrical Body

This is the classic "potbellied" robot. It is easy to draw stocky, solid robots using this shape.

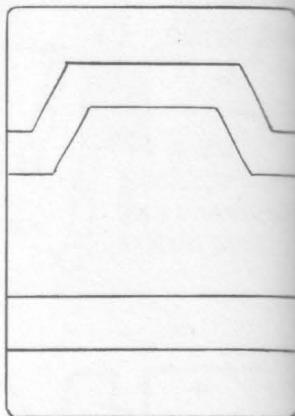
Draw three views of your robot since they are often drawn from a variety of angles.



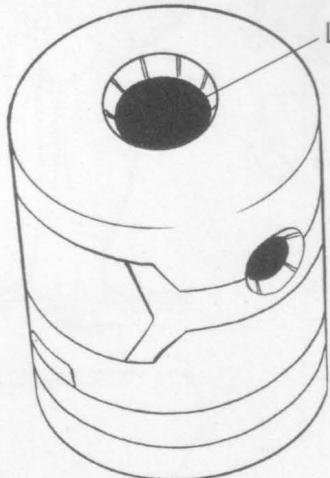
Front



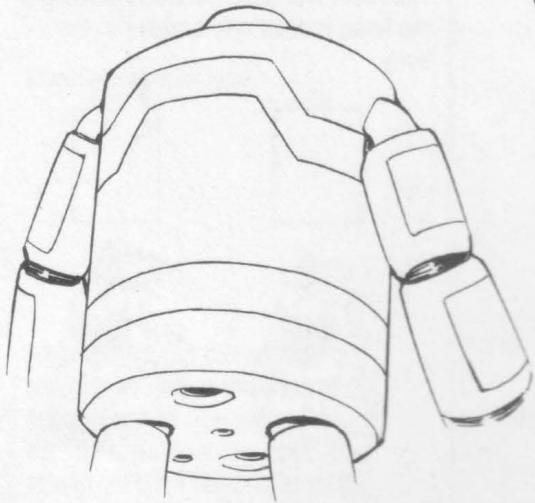
Side



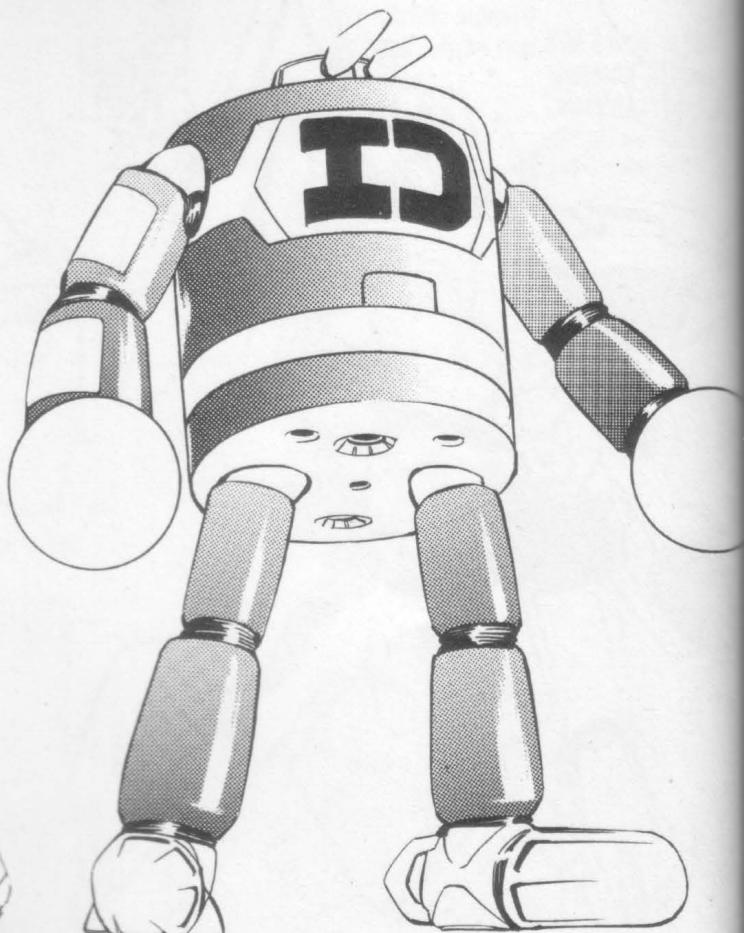
Back

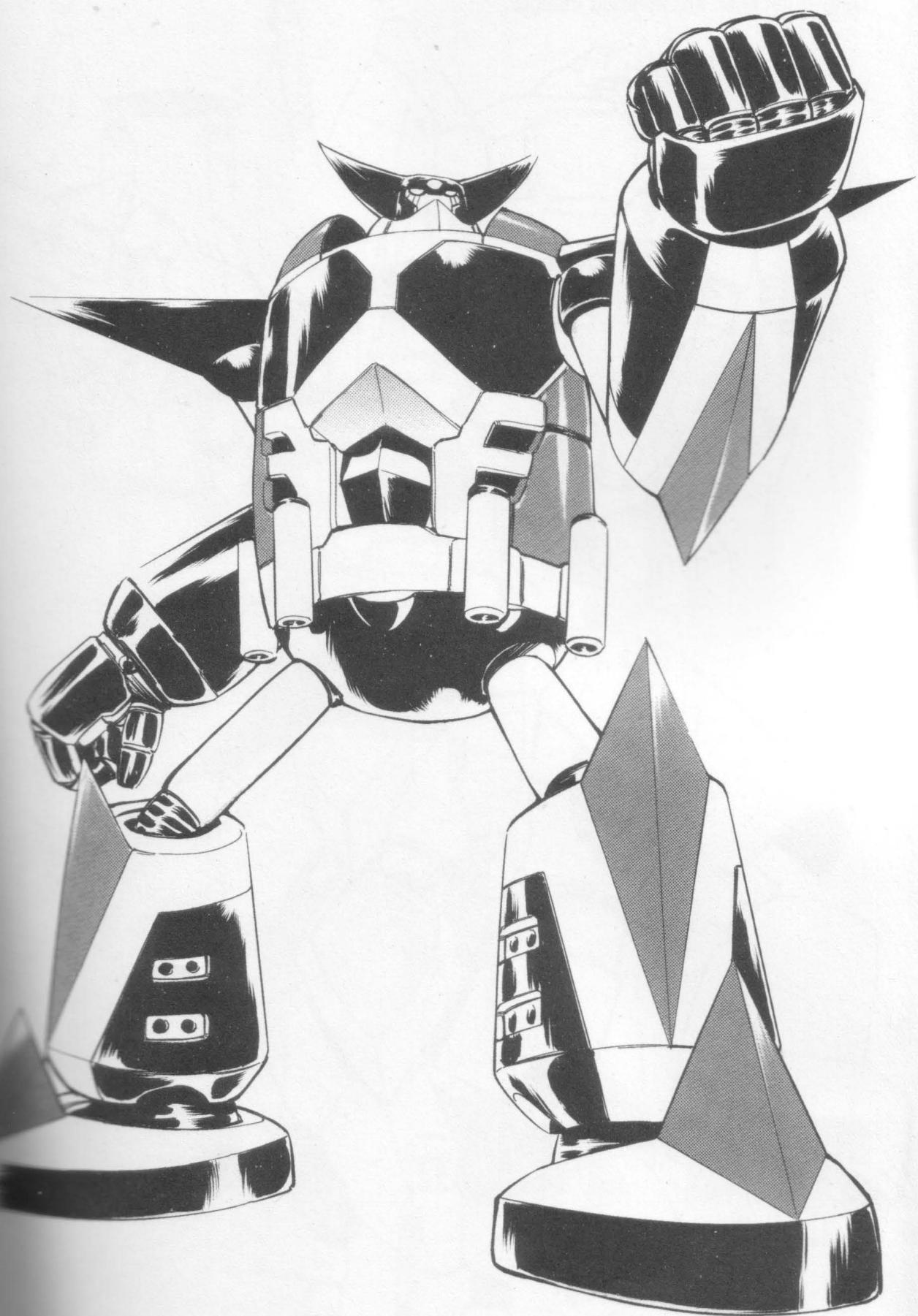


As seen from above



Carefully choose the locations of the arms and legs so they will look natural yet strong when the robot is viewed from the ground up.

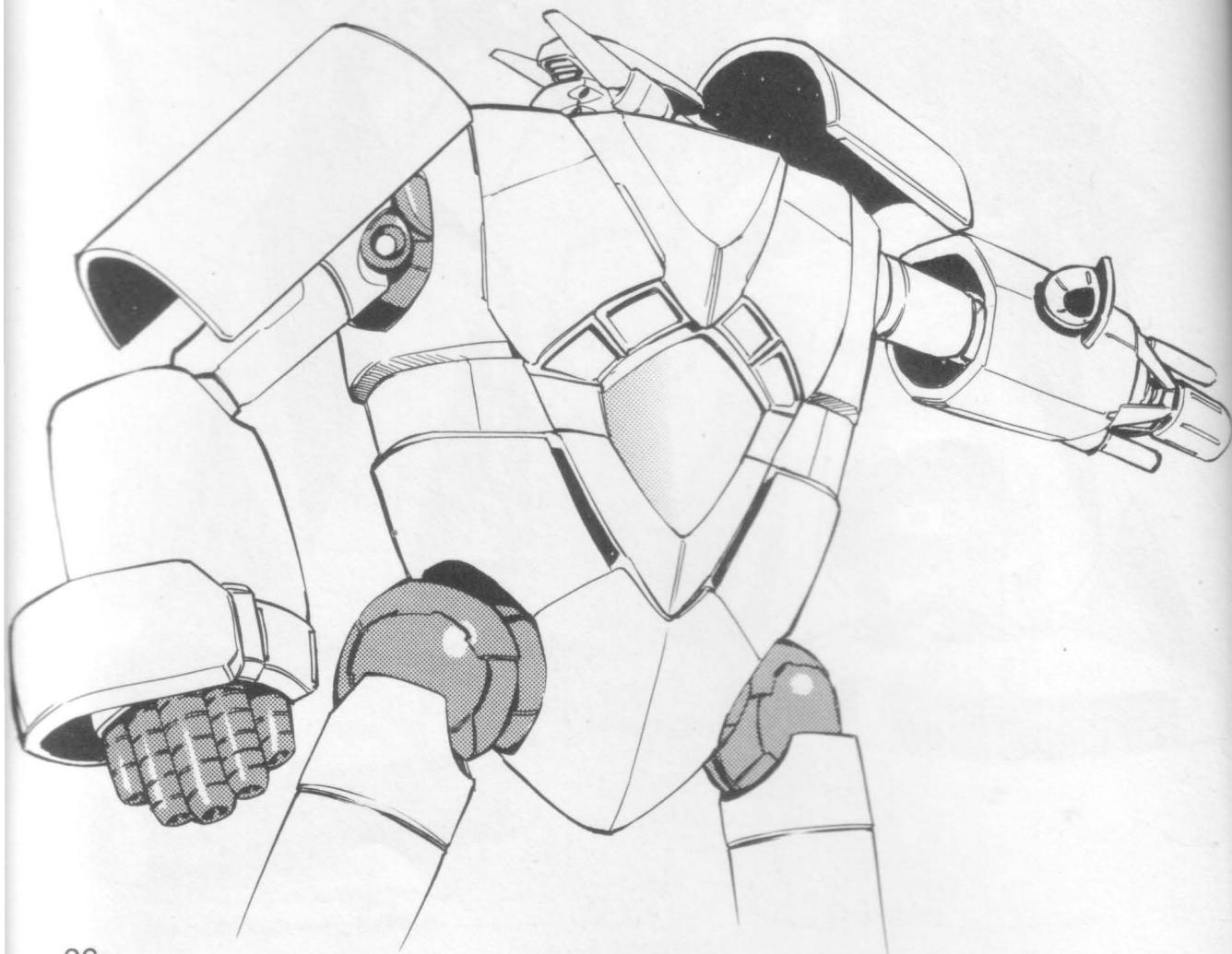
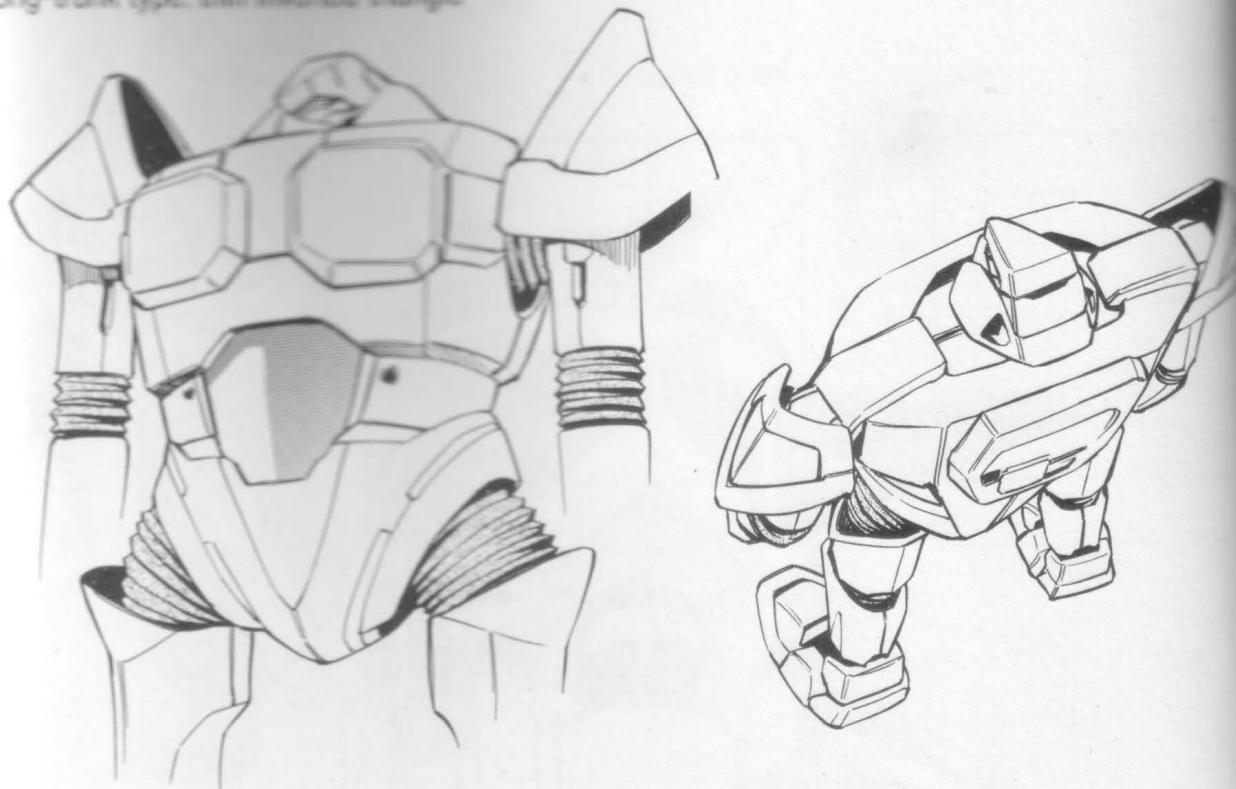




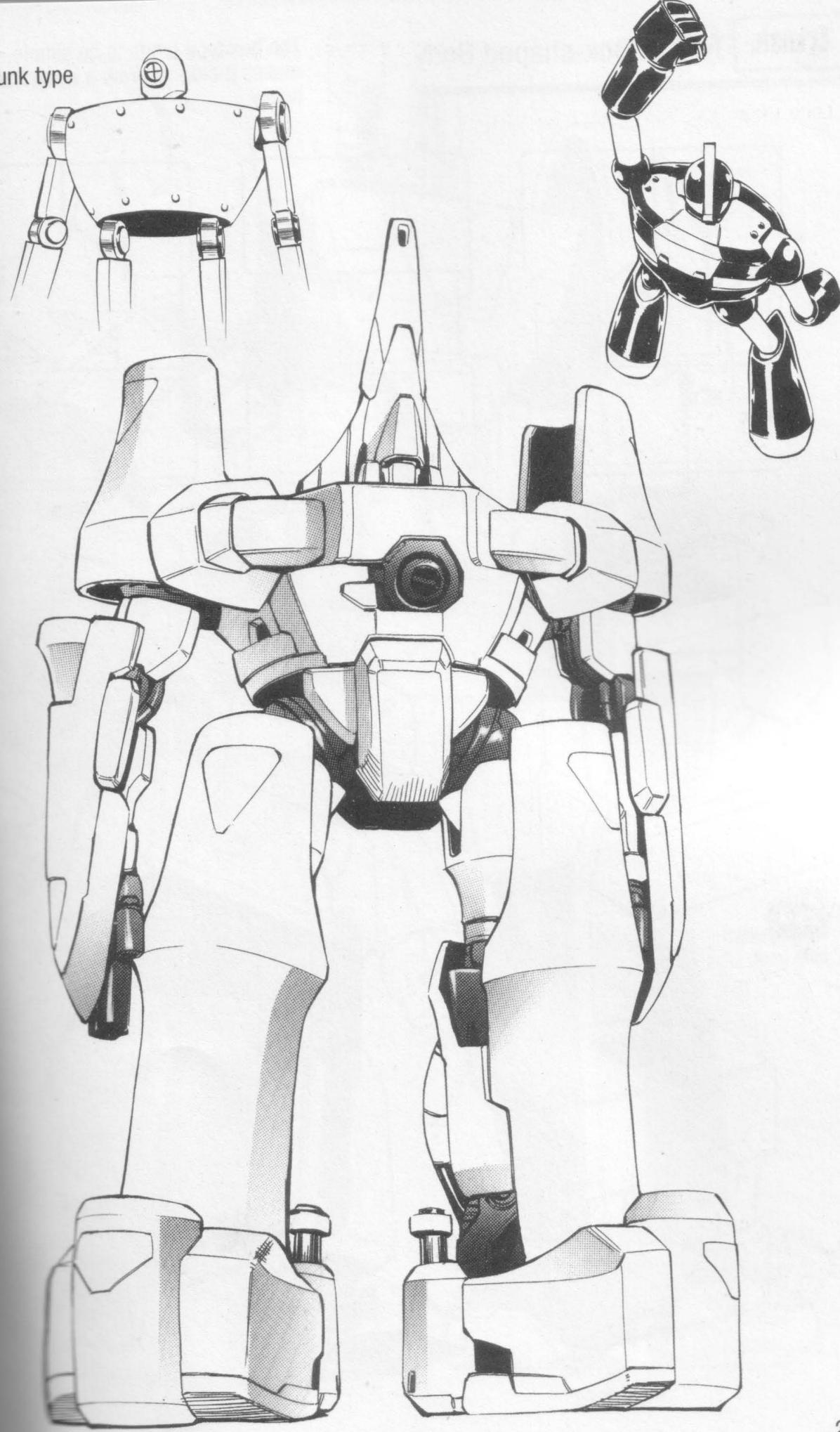
## Cylindrical Body Variations

Robots with short or thin trunks look more intimidating than those with stocky ones.

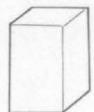
Long-trunk type: thin inverted triangle



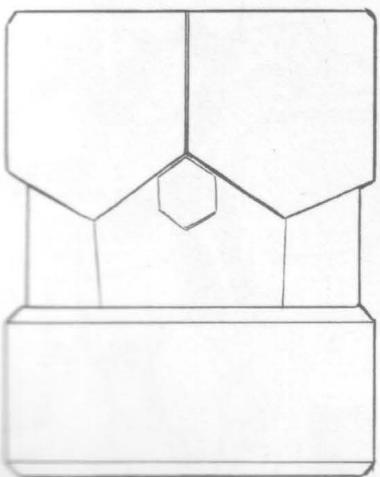
Short-trunk type



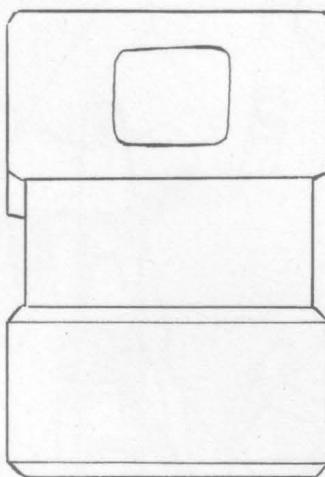
## Trunk Type 2: Box-shaped Body



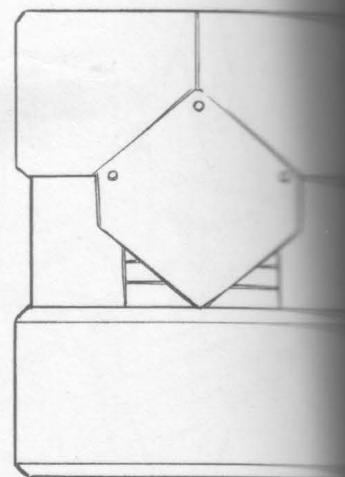
The box type tends to be simple, which makes it easy to draw a robot that looks heavy.



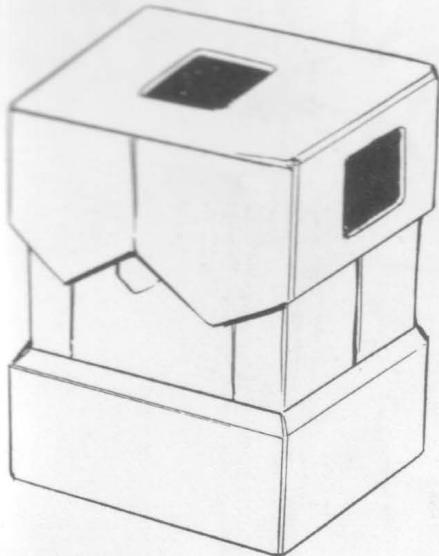
Front



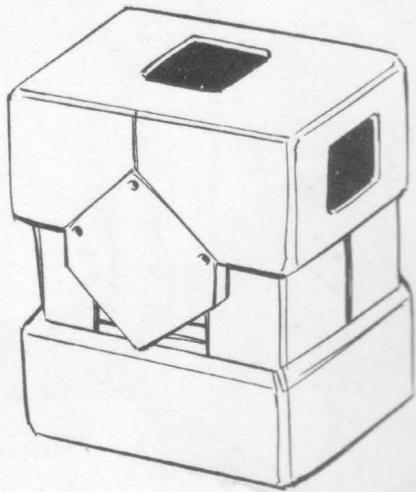
Side



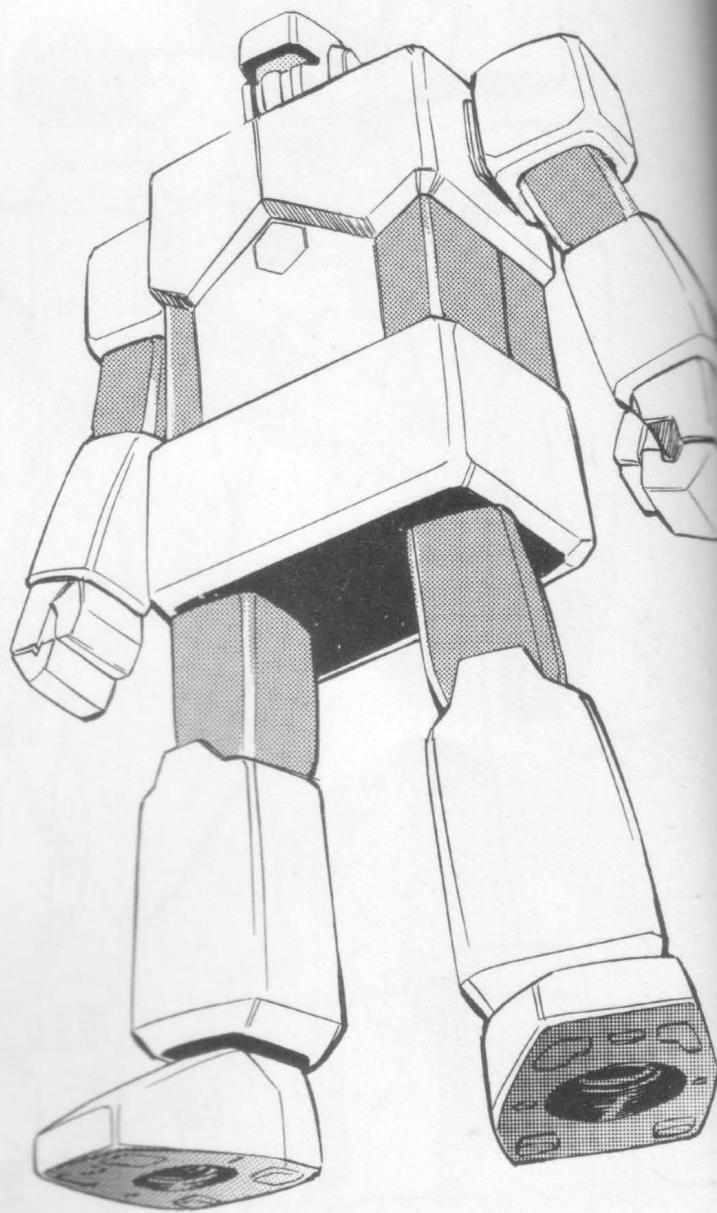
Back

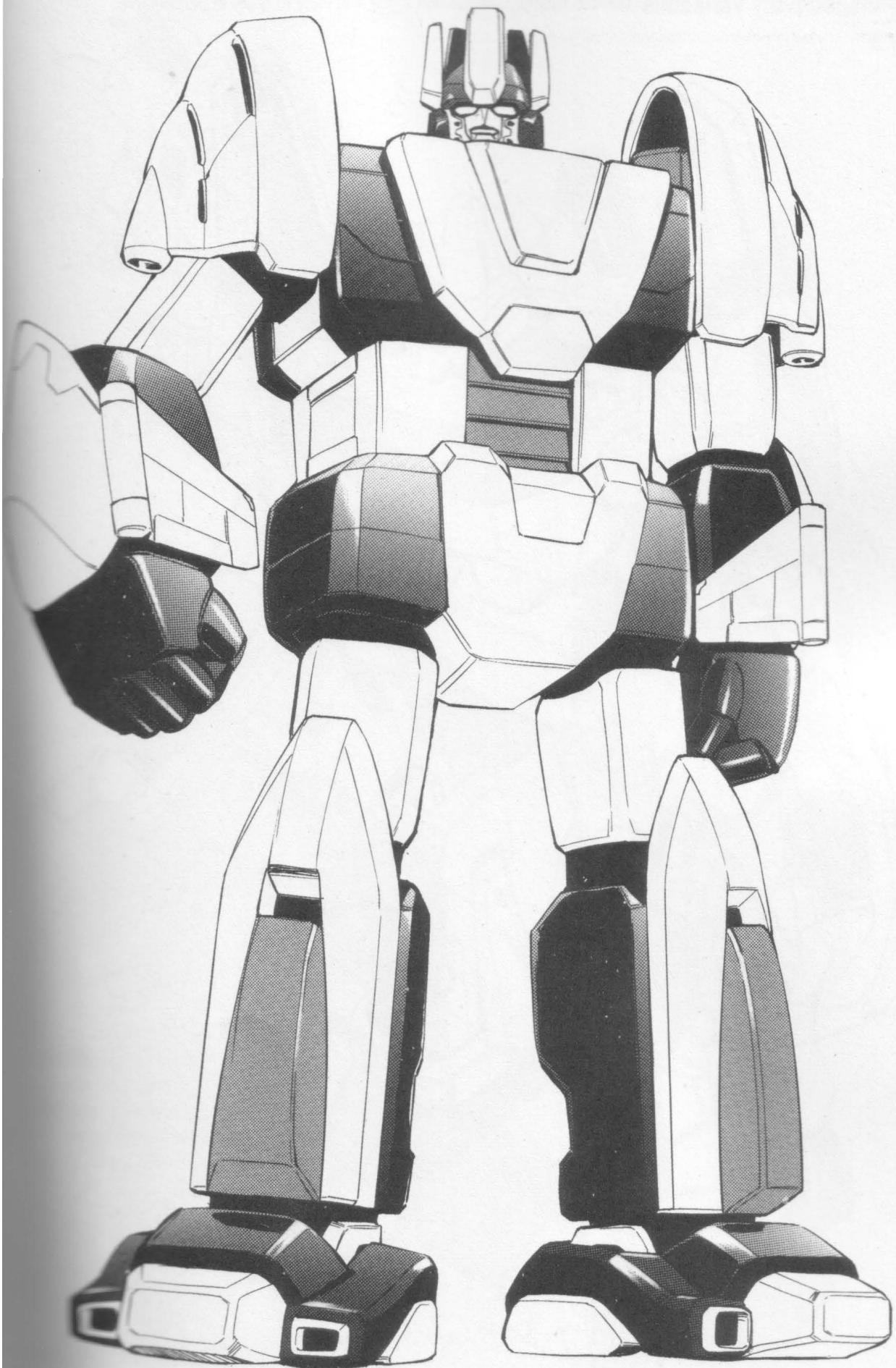


Looking down  
from front

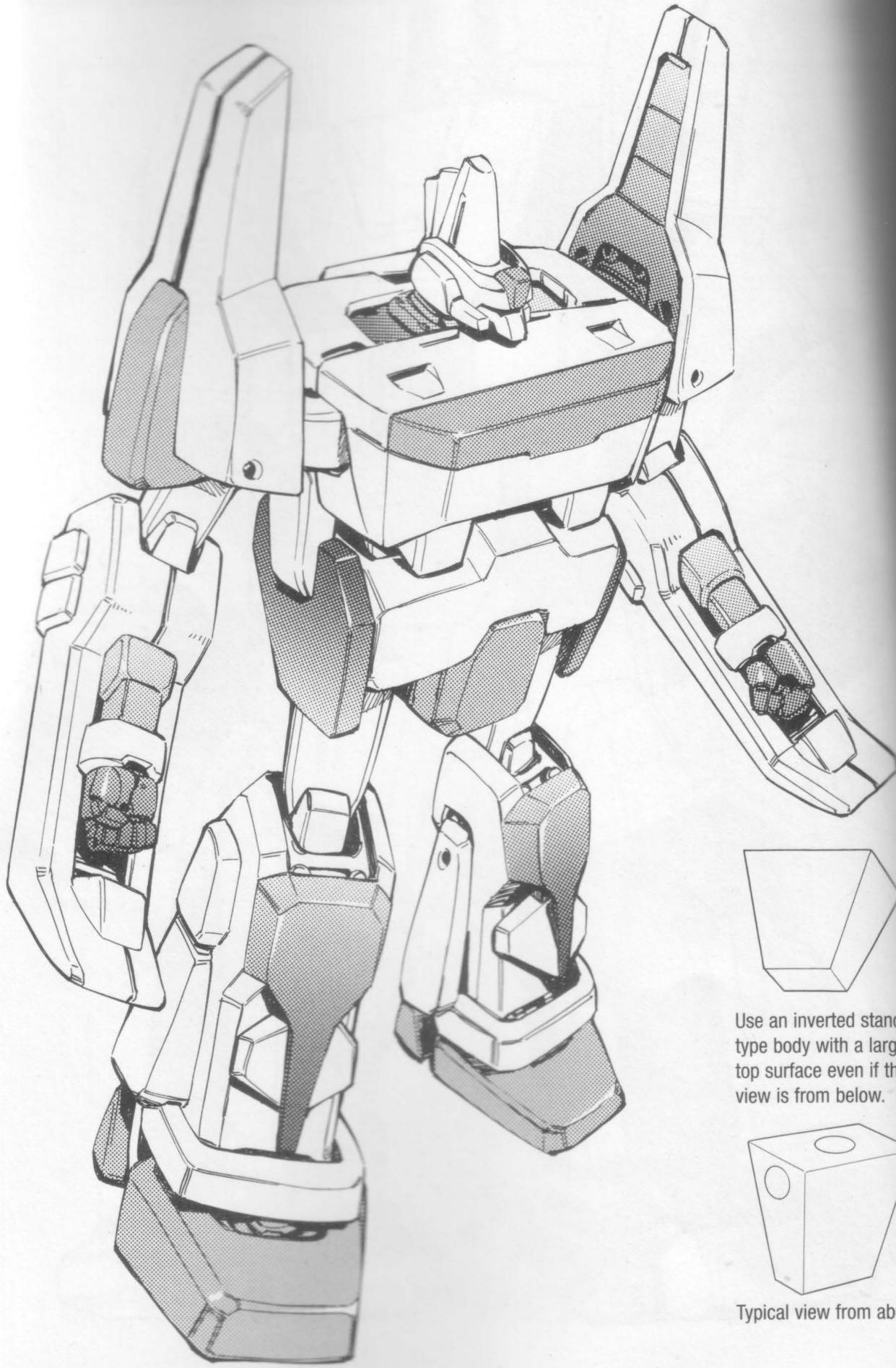


Looking down  
from behind

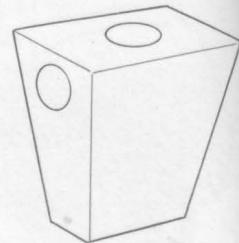




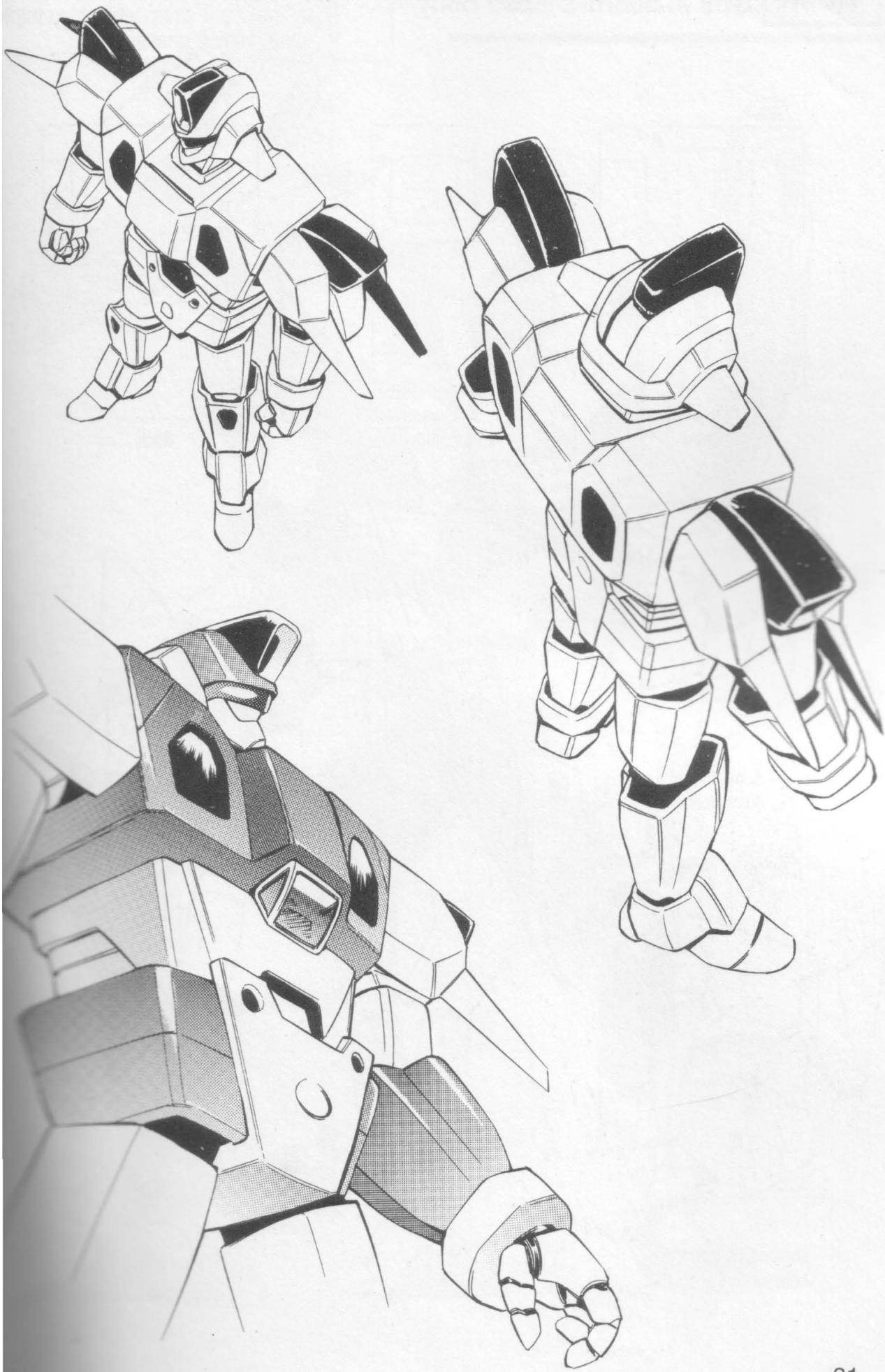
Box-shaped Body Variations Use a powerful composition since it is easy to draw in perspective.



Use an inverted stand-type body with a large top surface even if the view is from below.



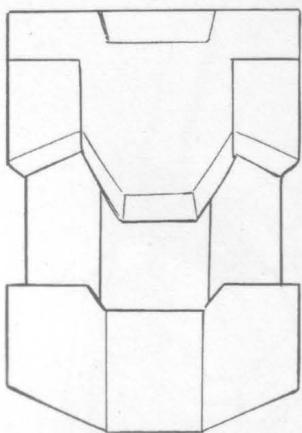
Typical view from above



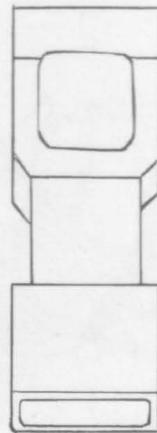
## Trunk Type 3: Board-shaped Body



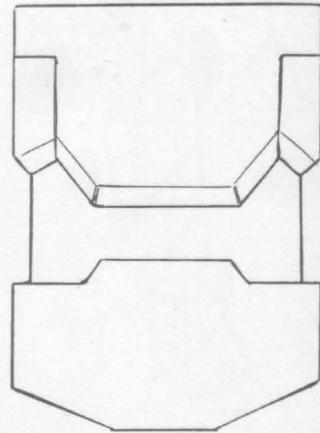
Attempt to make the most of this thinness by making it sharp while also thinking about adding unevenness.



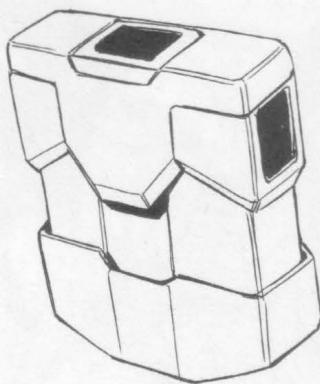
Front



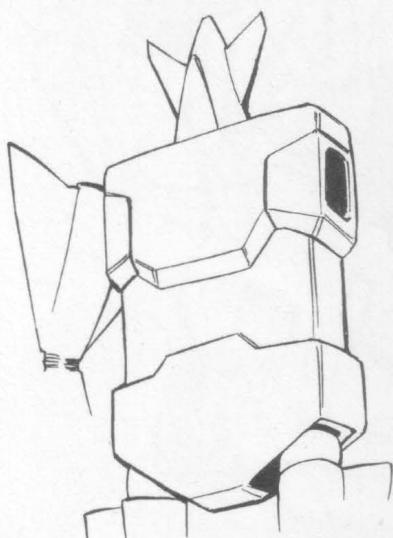
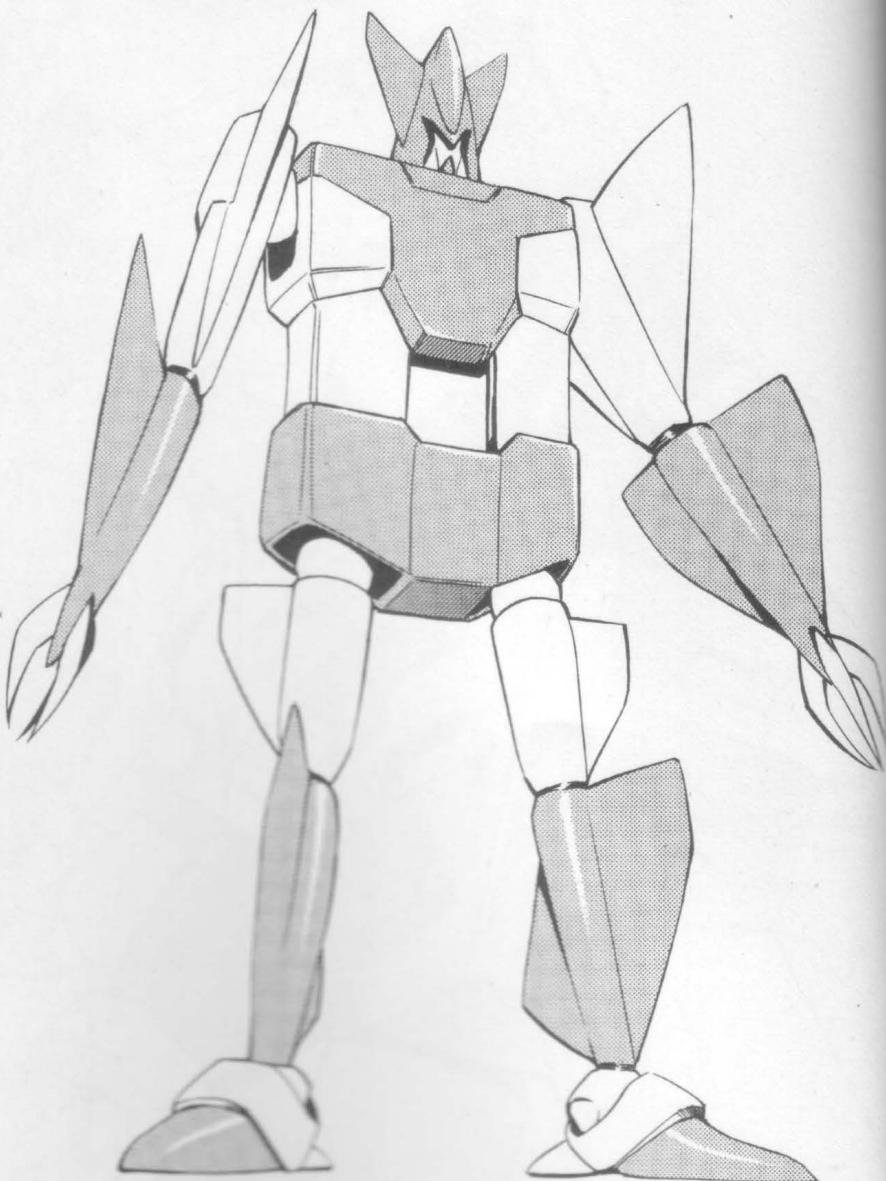
Side



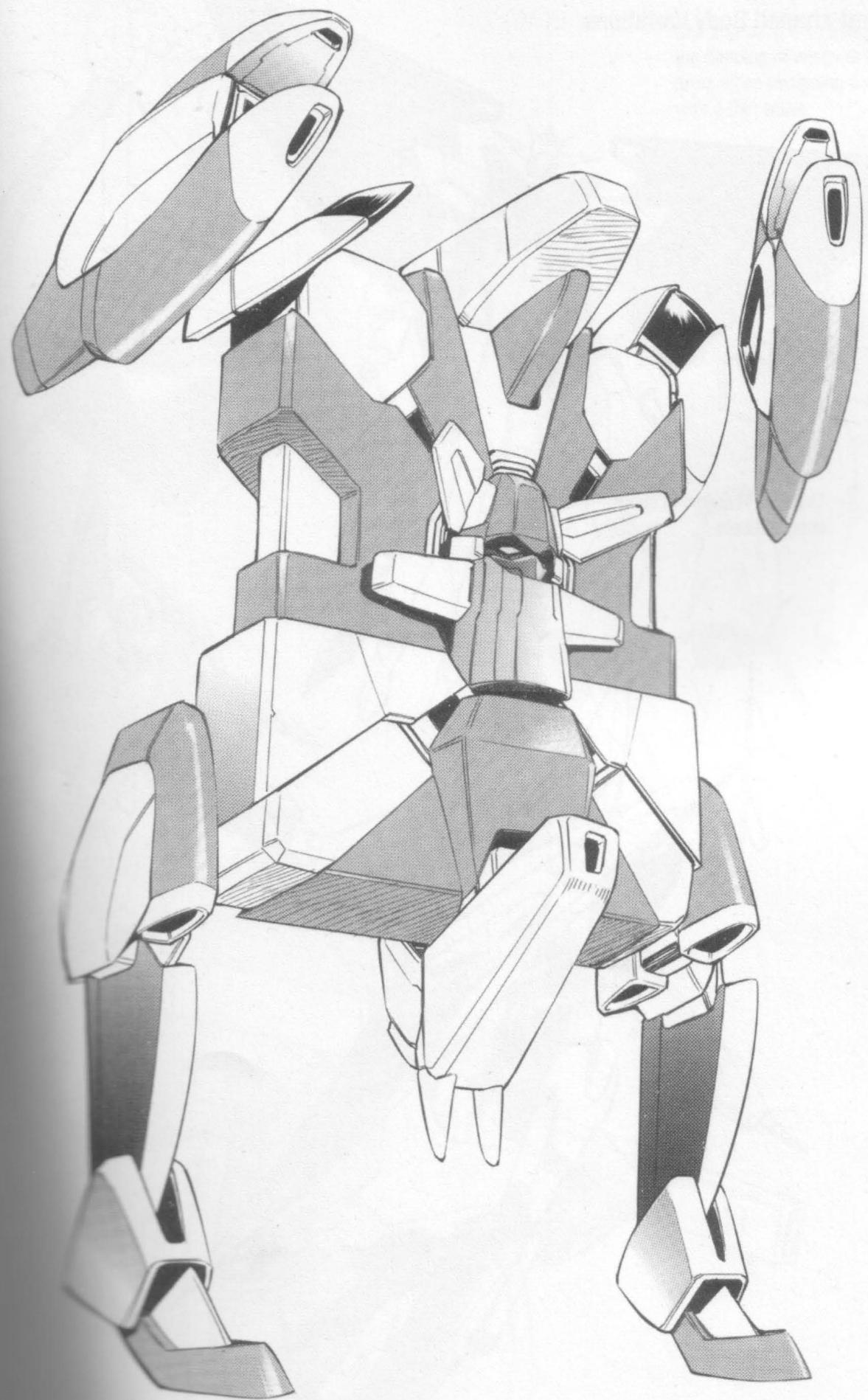
Back



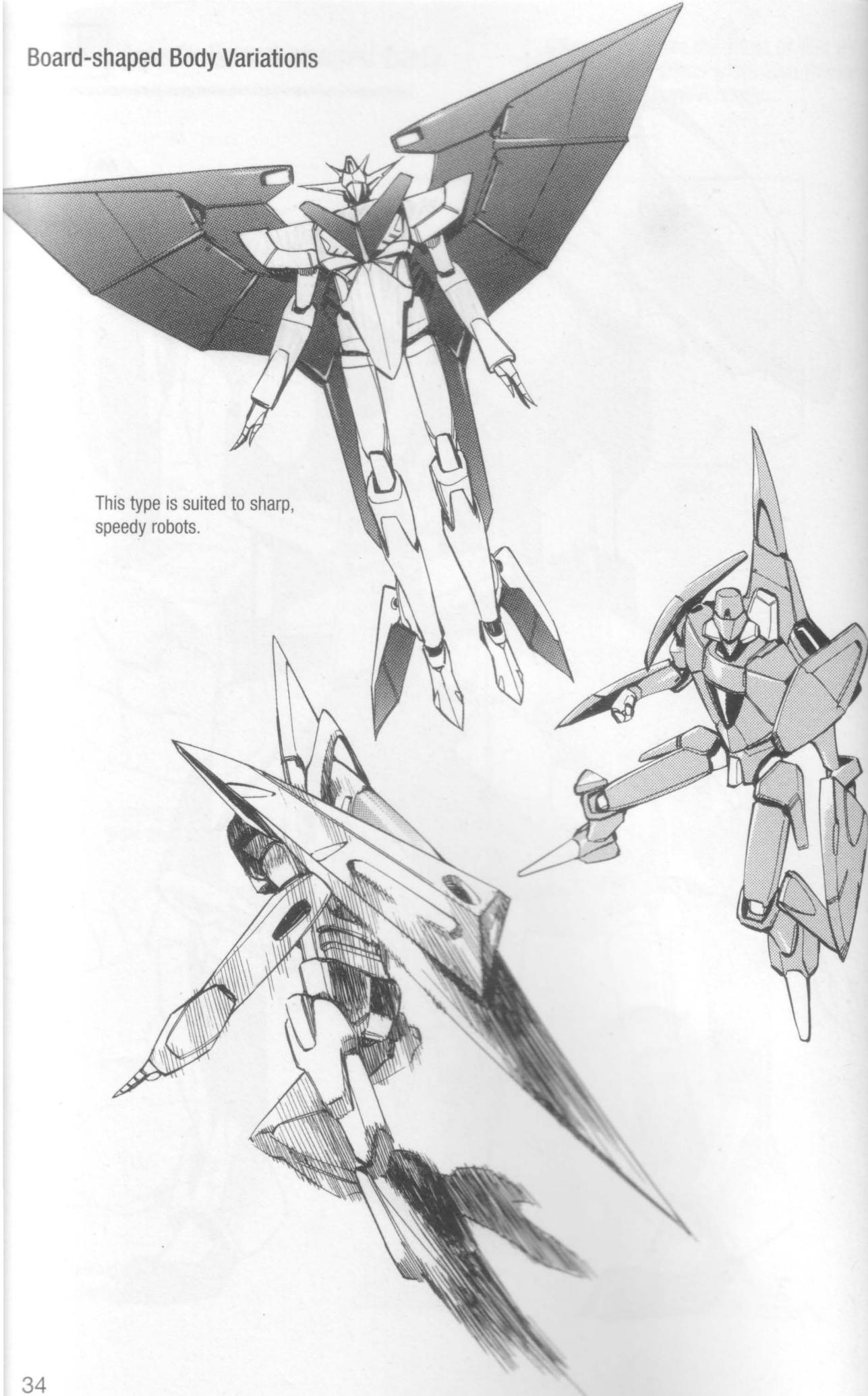
Looking down from front



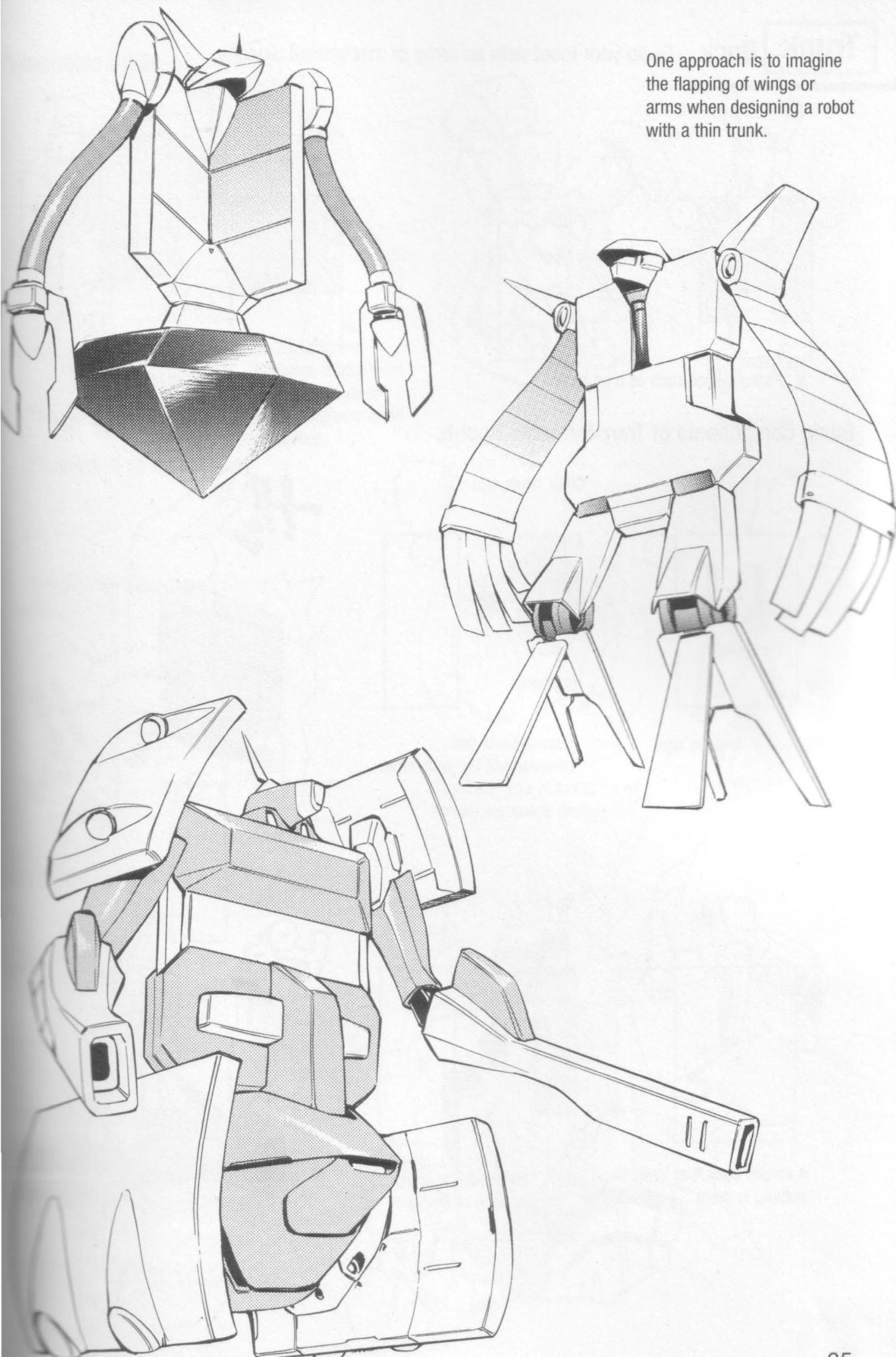
Looking up from behind



## Board-shaped Body Variations



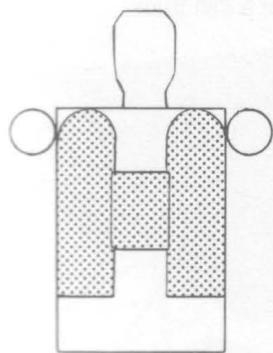
This type is suited to sharp, speedy robots.



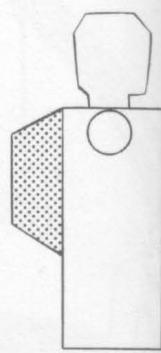
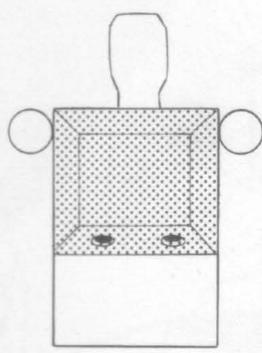
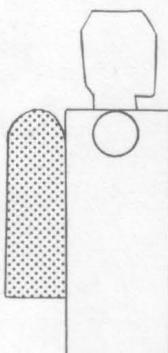
One approach is to imagine the flapping of wings or arms when designing a robot with a thin trunk.

## Trunk Back

Equip your robot with an array of mechanical devices.

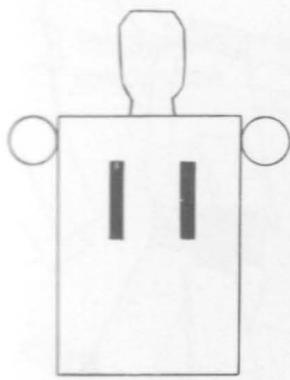


Flying device such as a jet pack

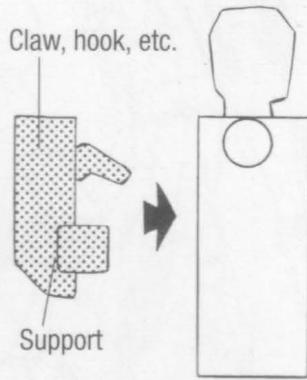


Weapons, fuel tanks, etc.

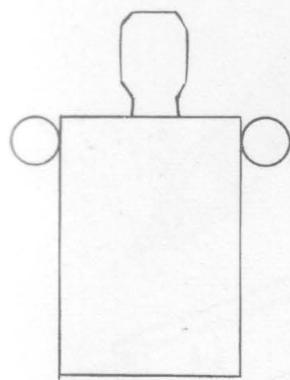
### Basic Components of Transformable Robots



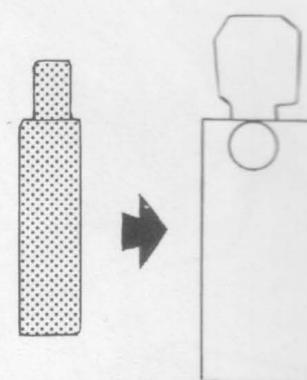
Mechanical docking type



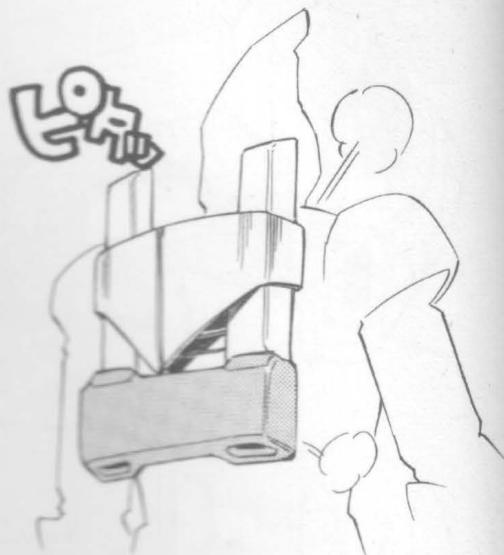
Choose parts that complement the body type.



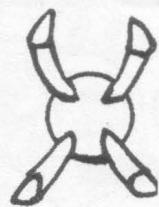
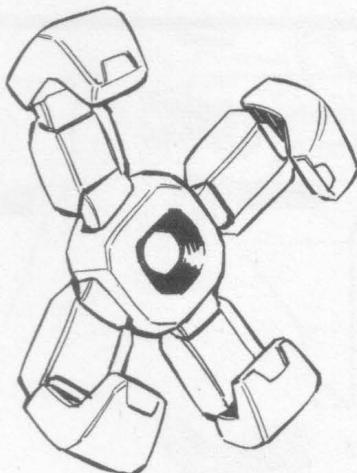
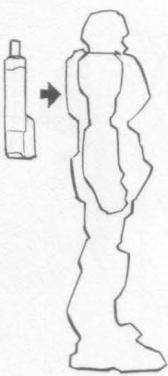
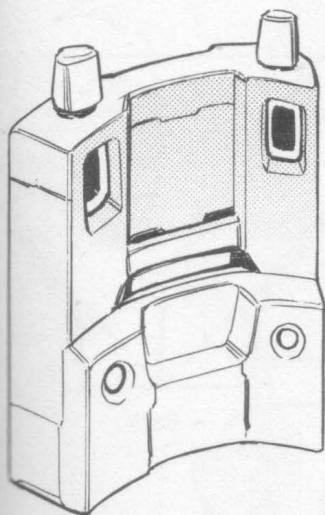
A simple back that looks like nothing is there



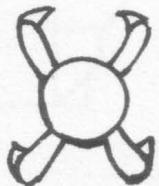
Part with the same surface as the back



## Attachable Units



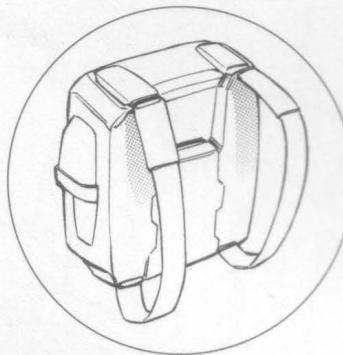
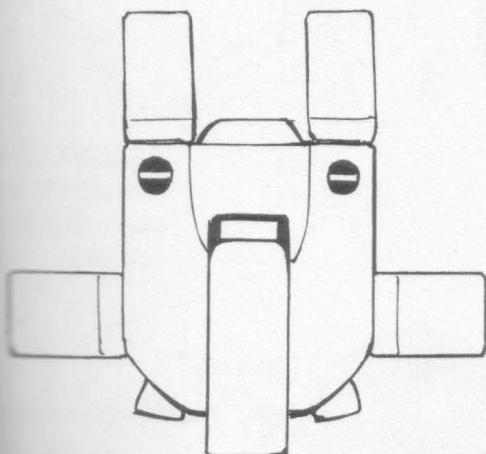
Back



Underbelly

Pressure-type attachment

Example of claw-type attachment

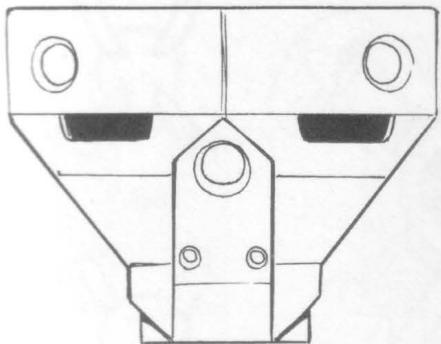


The claw type is based on a simple backpack design.

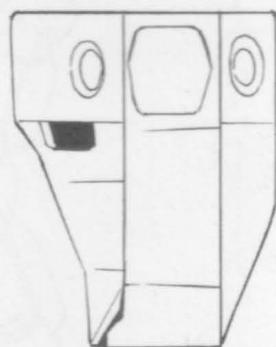


## Chest

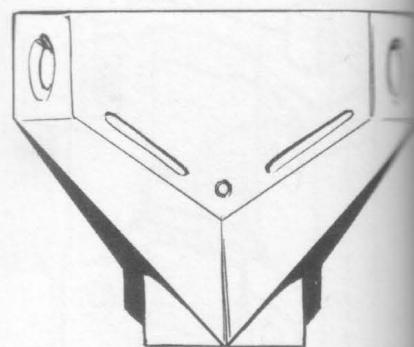
### Part 1: Inverted-triangle Type



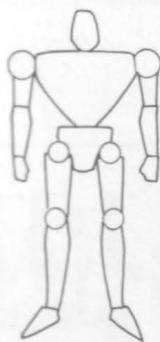
Front



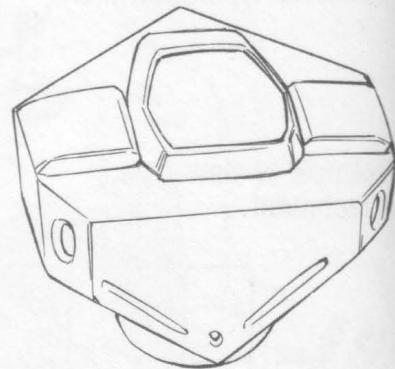
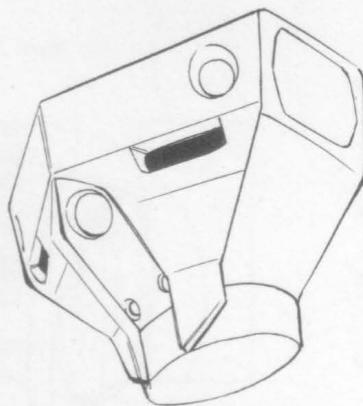
Side



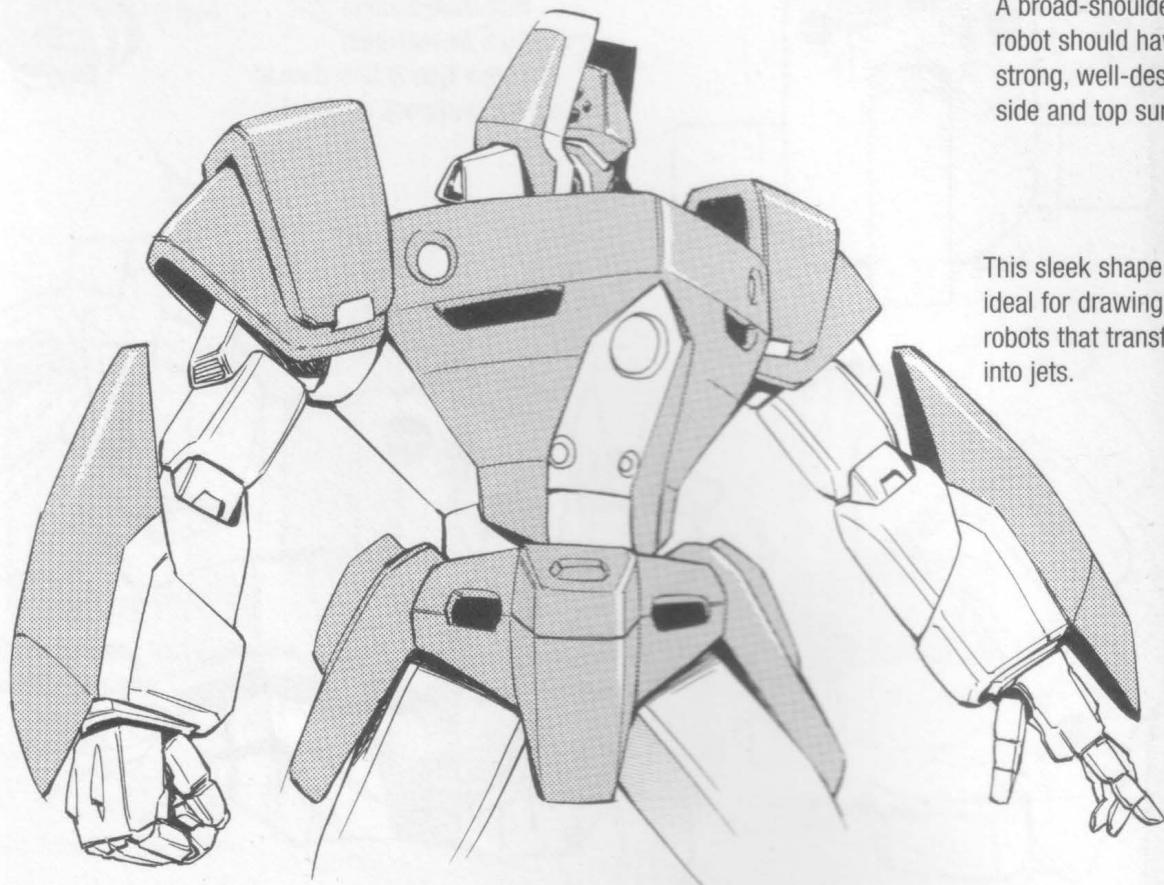
Back



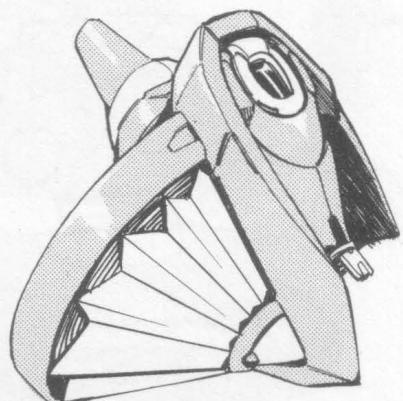
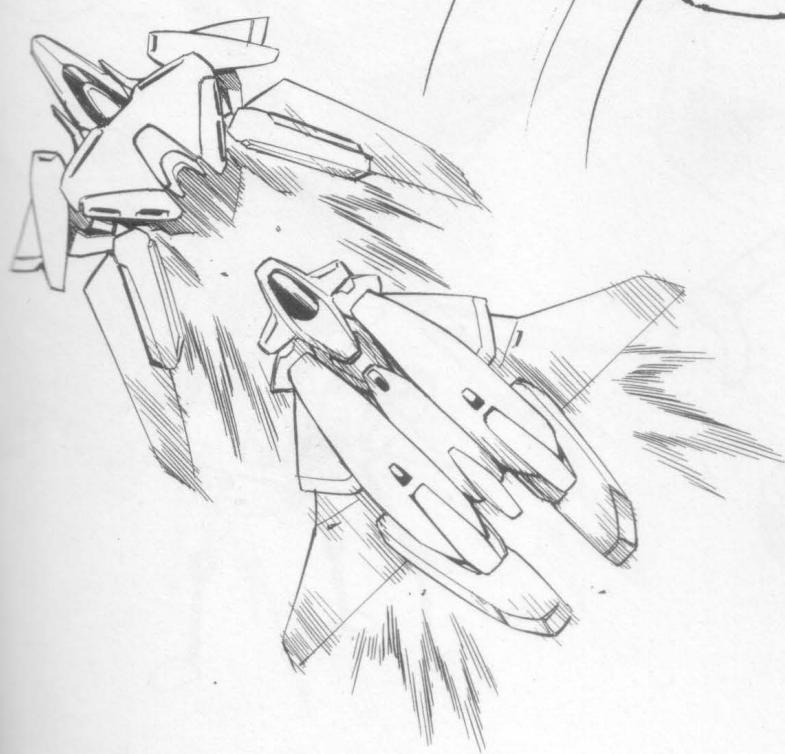
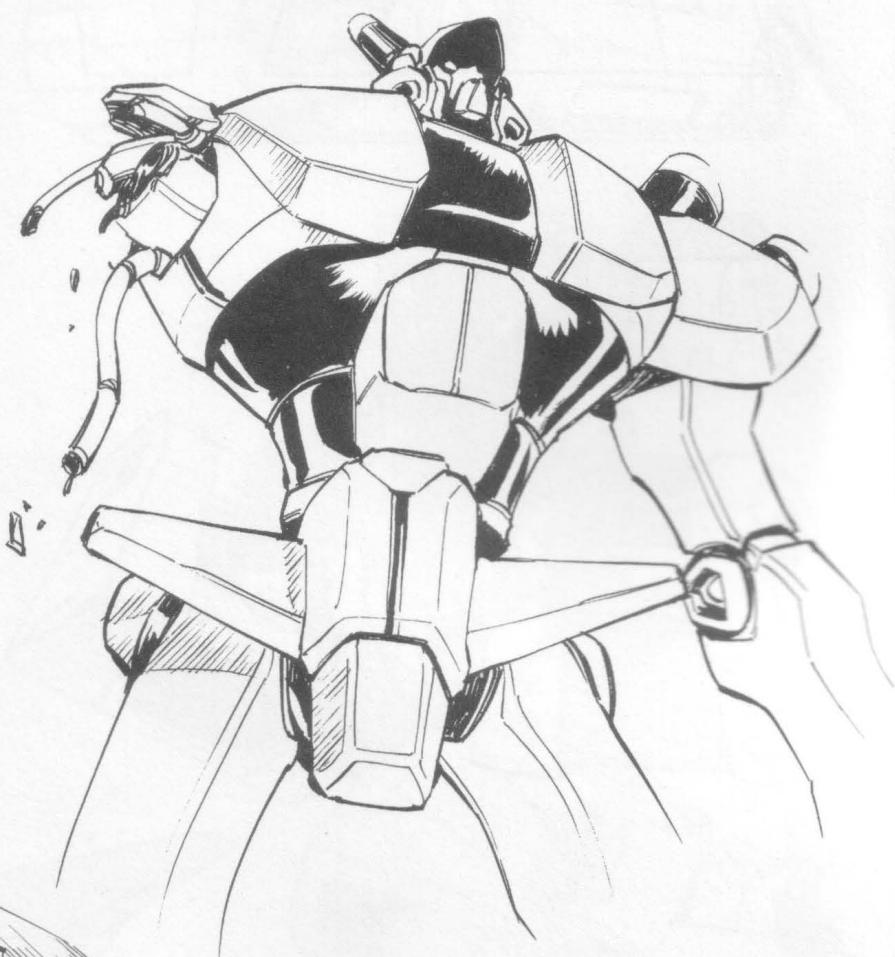
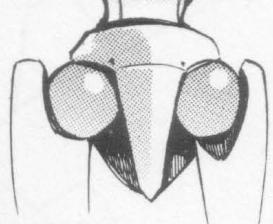
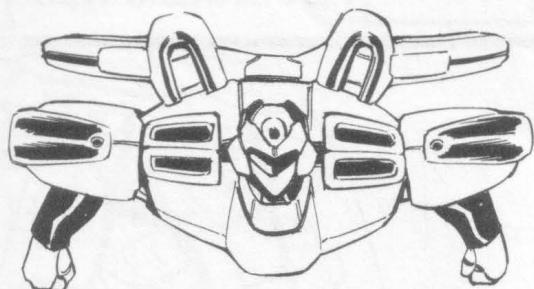
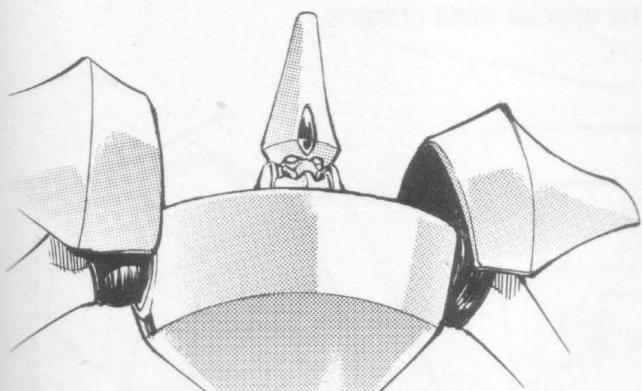
Male form



A broad-shouldered robot should have strong, well-designed side and top surfaces



This sleek shape is ideal for drawing robots that transform into jets.

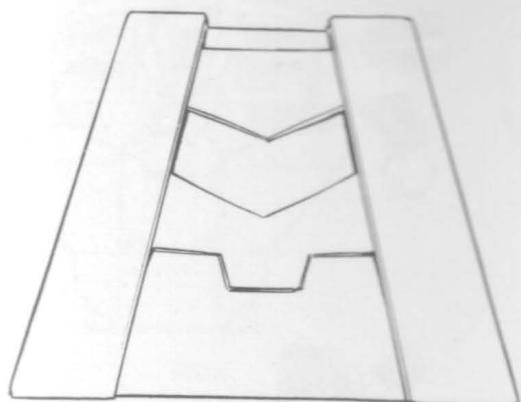


Close-up view of the back of a transformable robot.

## Chest

### Part 2: Stand Type

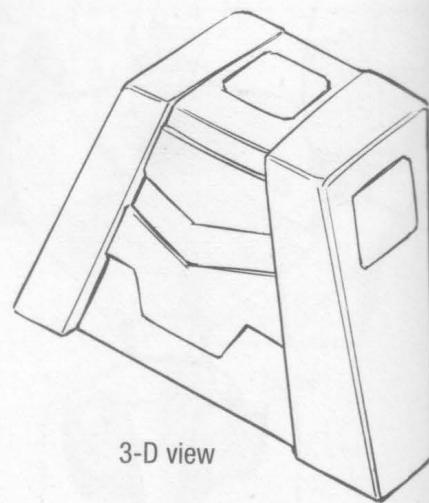
This shape is suited to tank-type robots and other special robot designs.



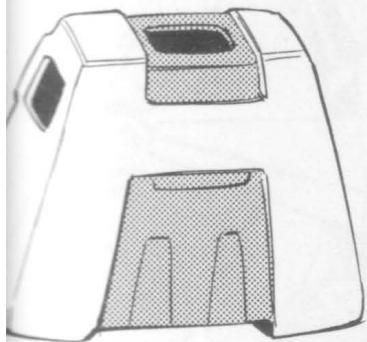
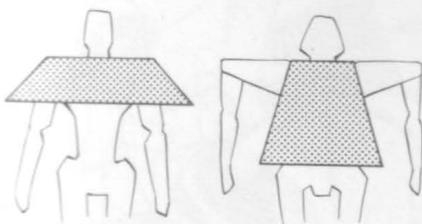
Front



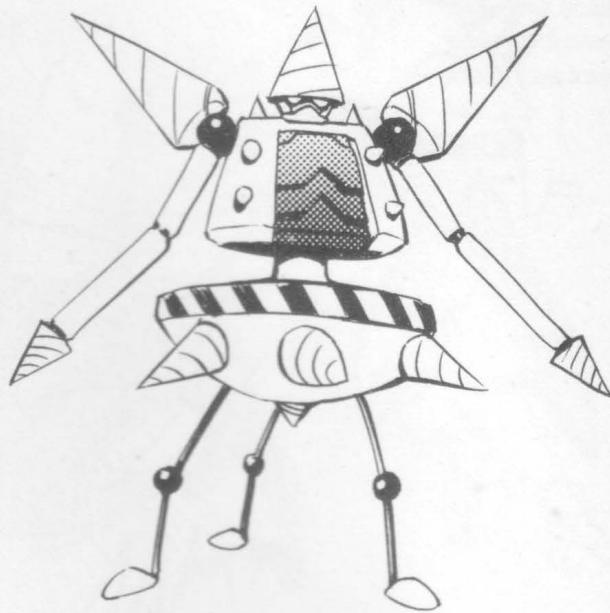
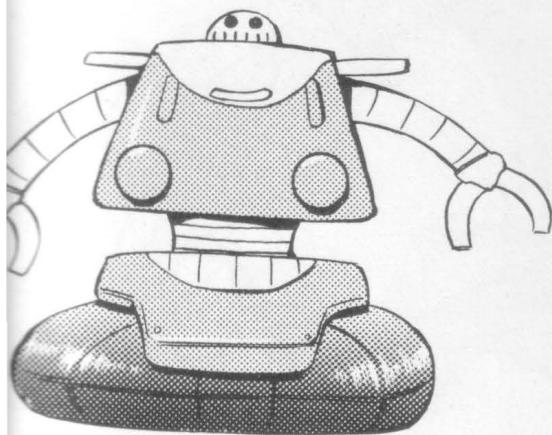
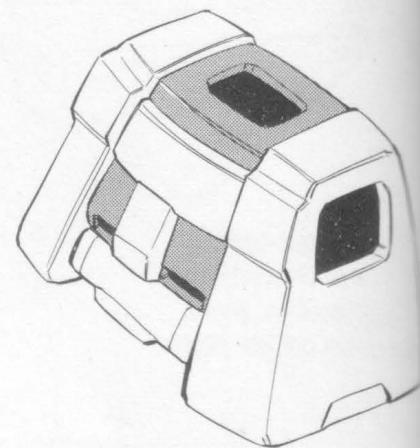
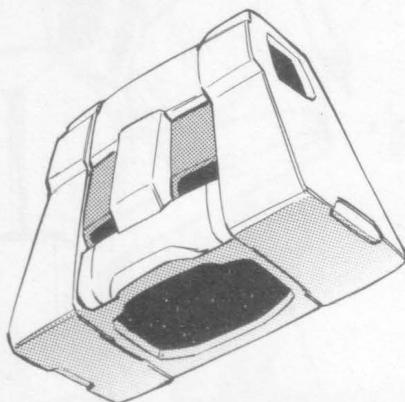
Side



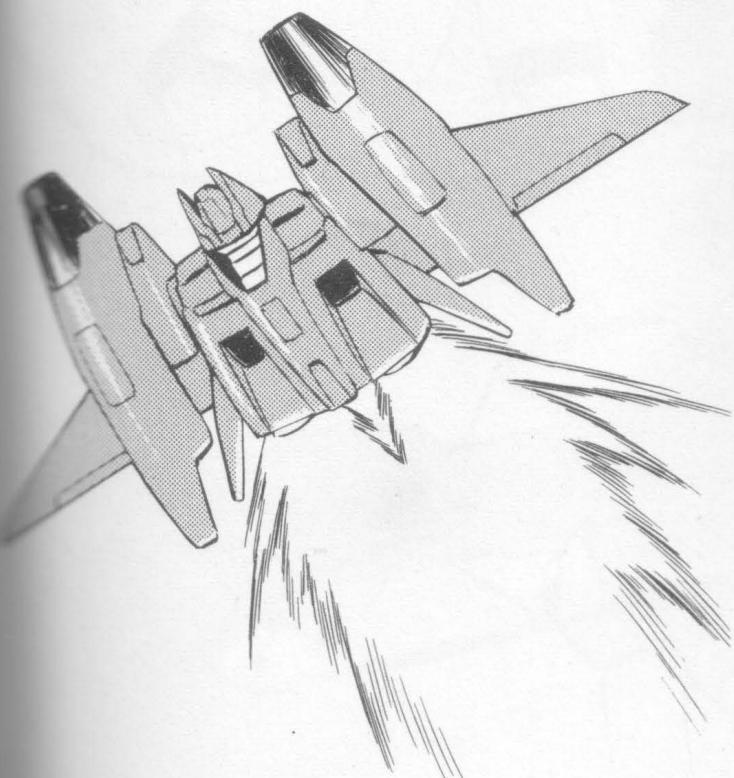
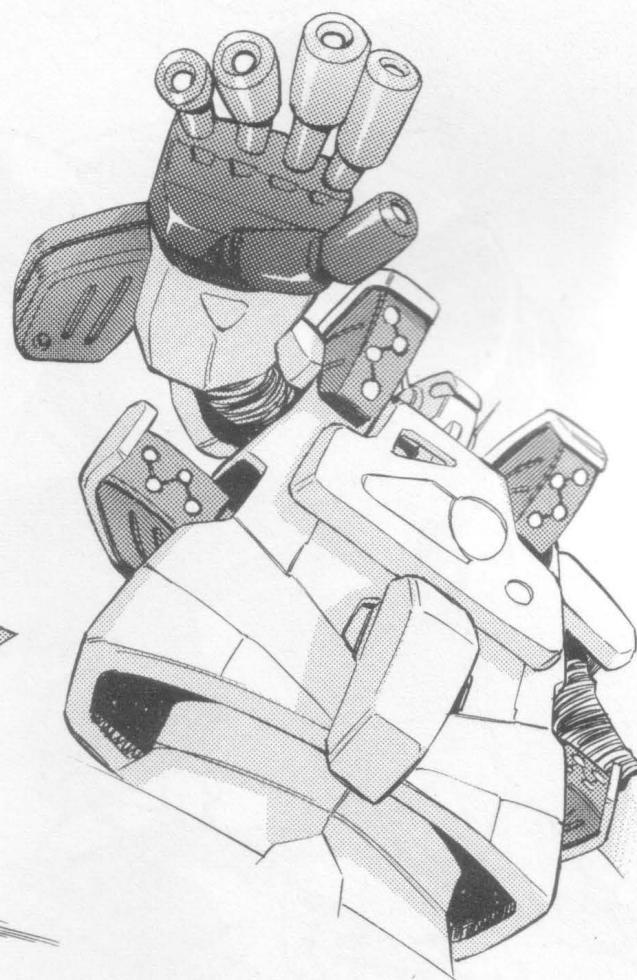
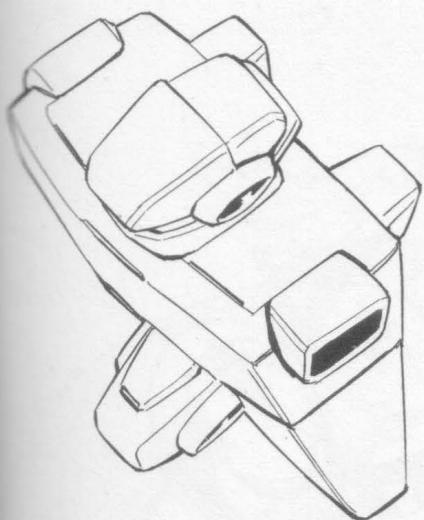
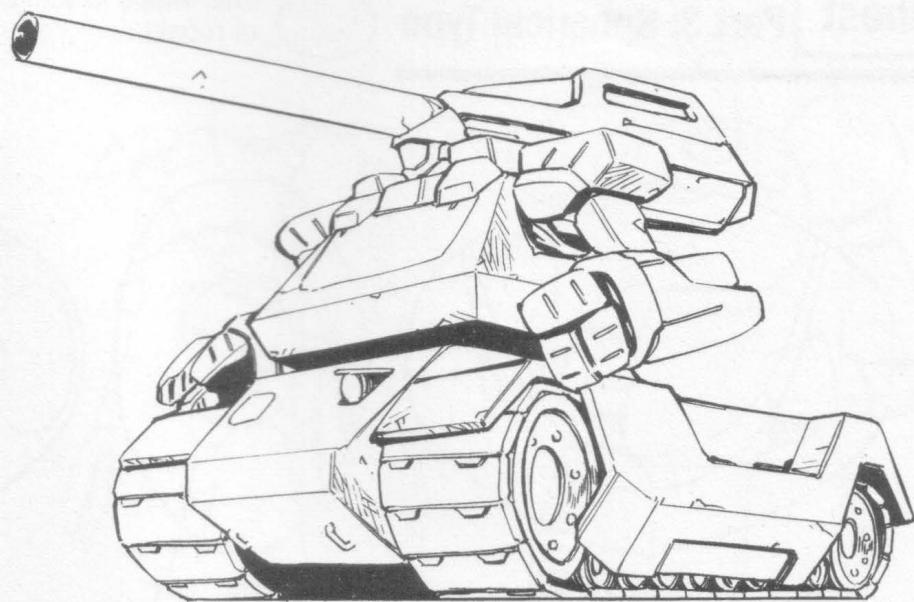
3-D view



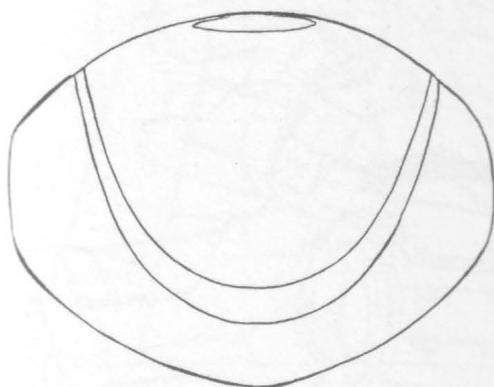
Back



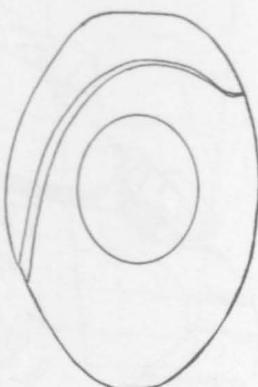
The stand-type chest enhances the originality of the lower body.



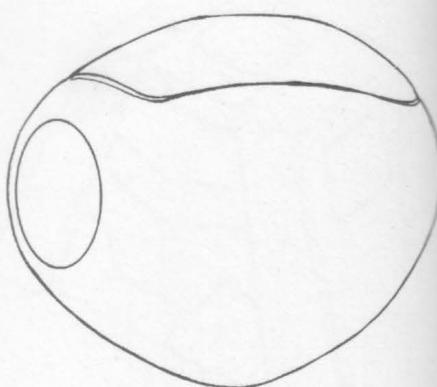
This shape is suitable for drawing all types of robots.



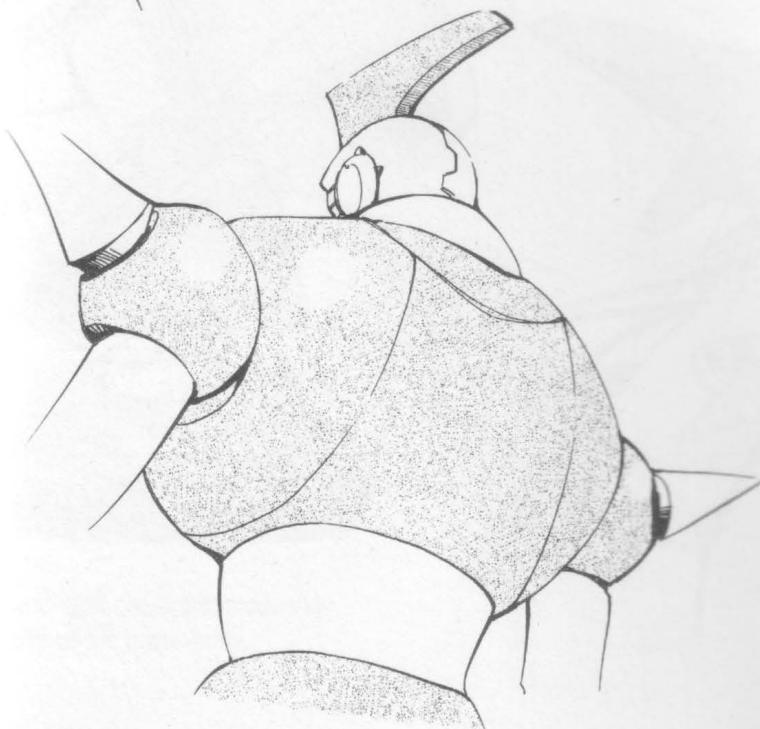
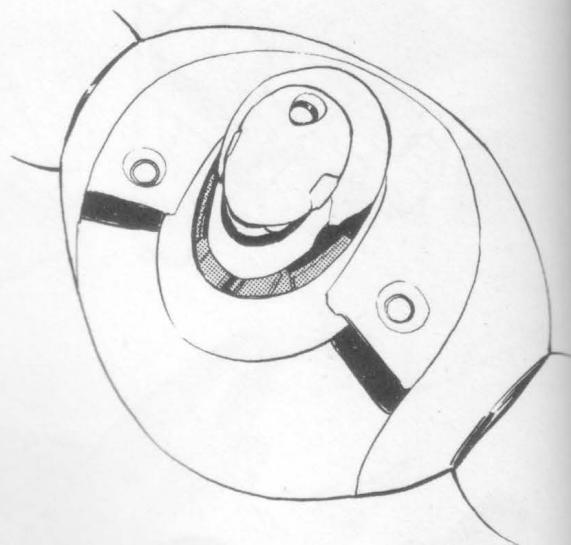
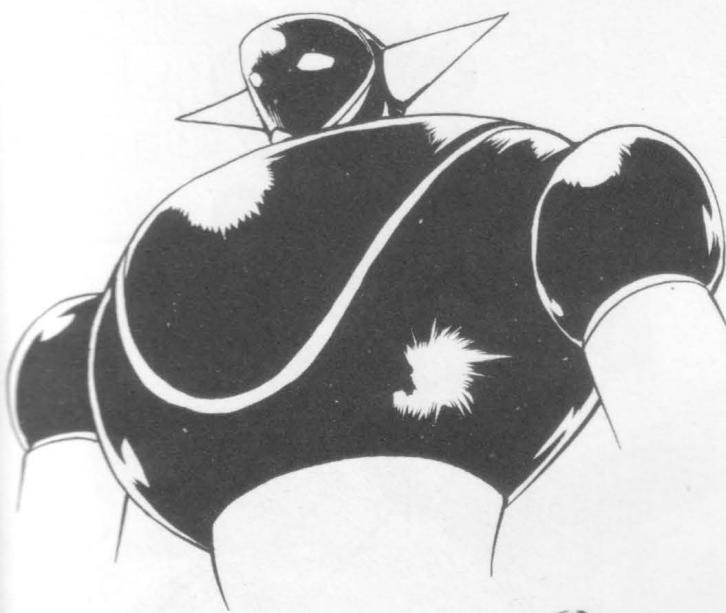
Front

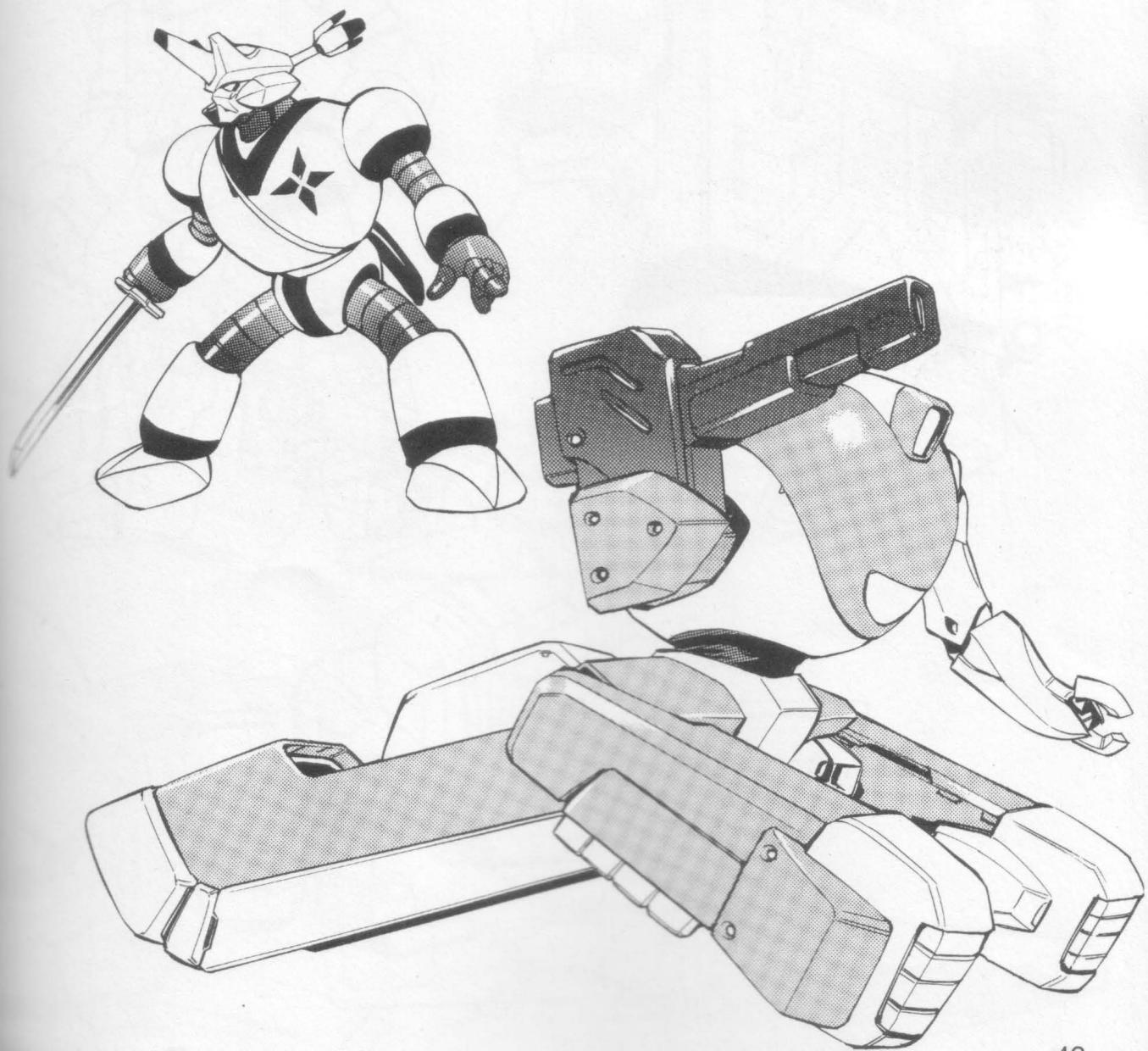
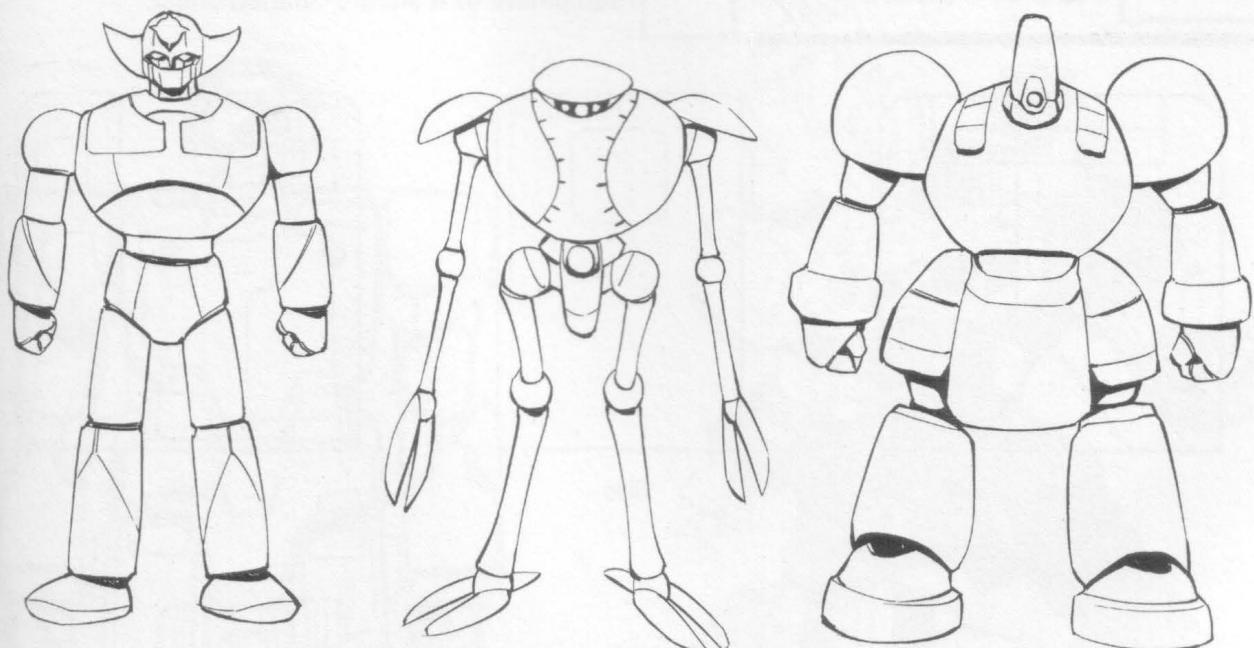


Side



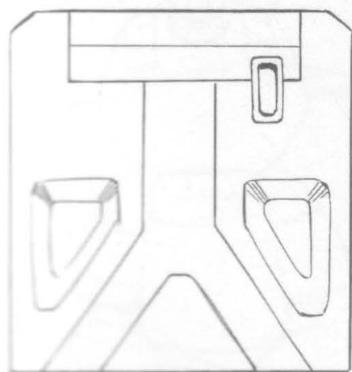
Back



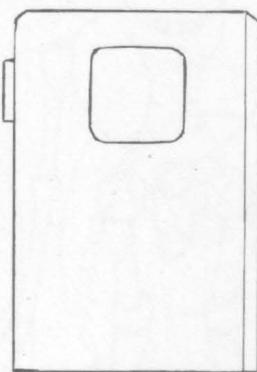


## Chest Part 4: Square Type

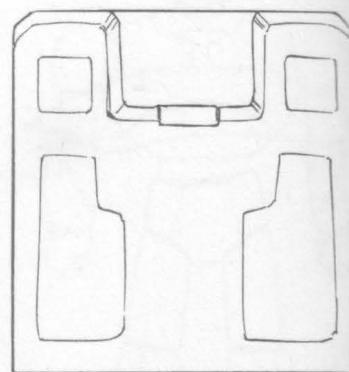
It is easy to attach a variety of parts and optional equipment to a square-shaped chest.



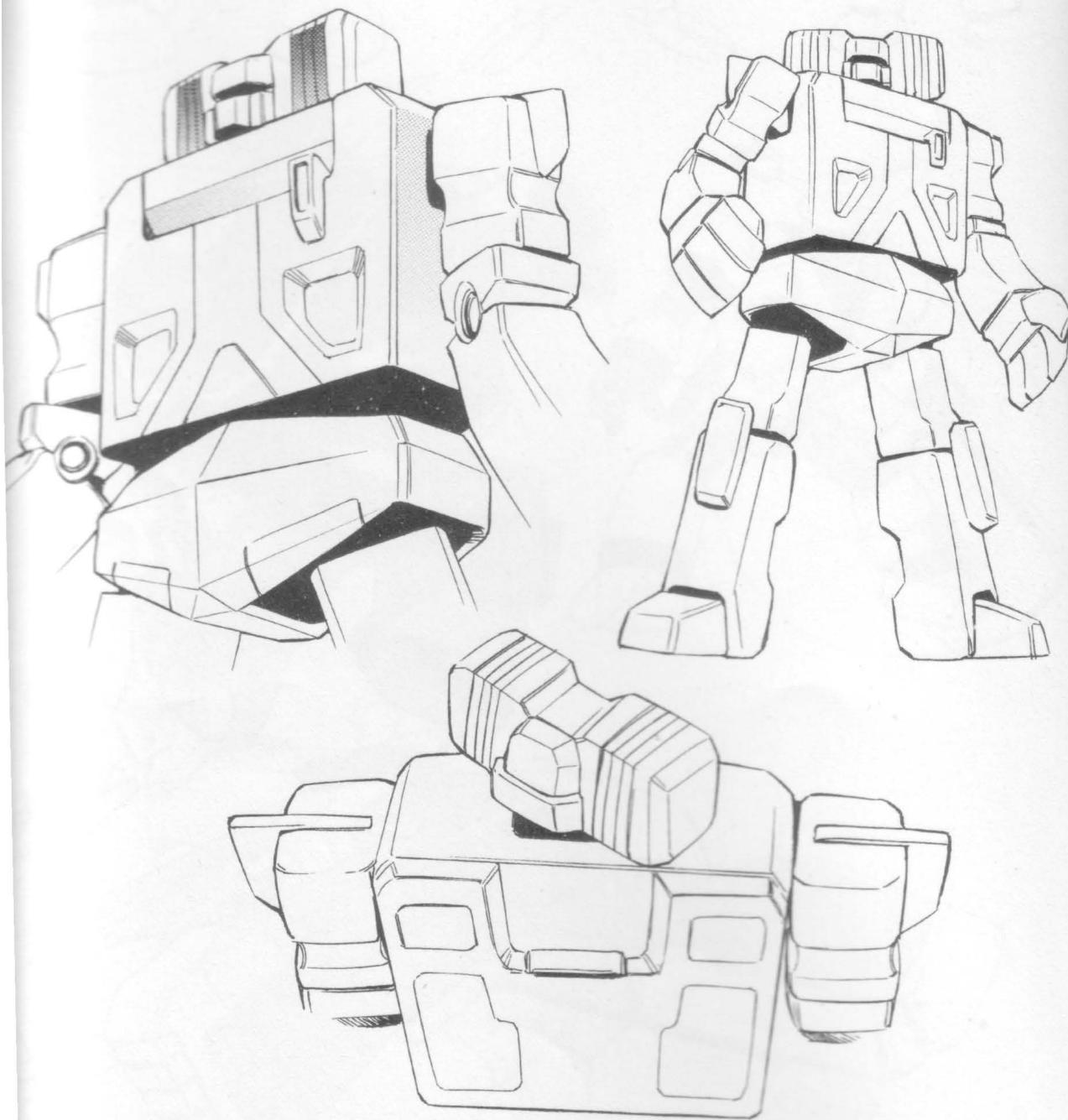
Front

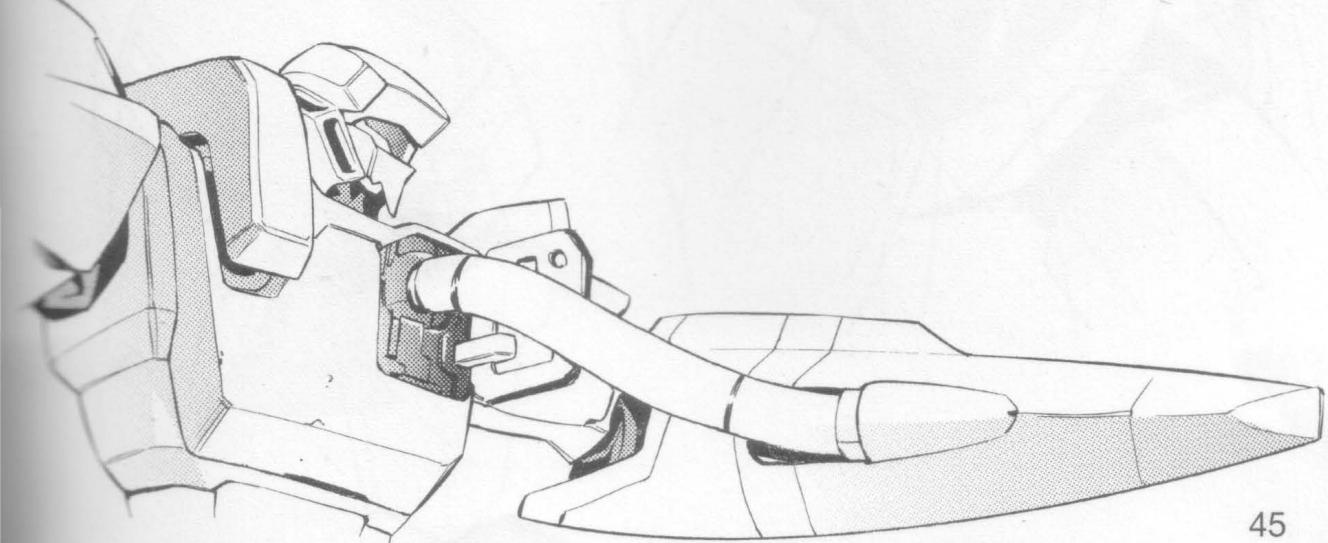
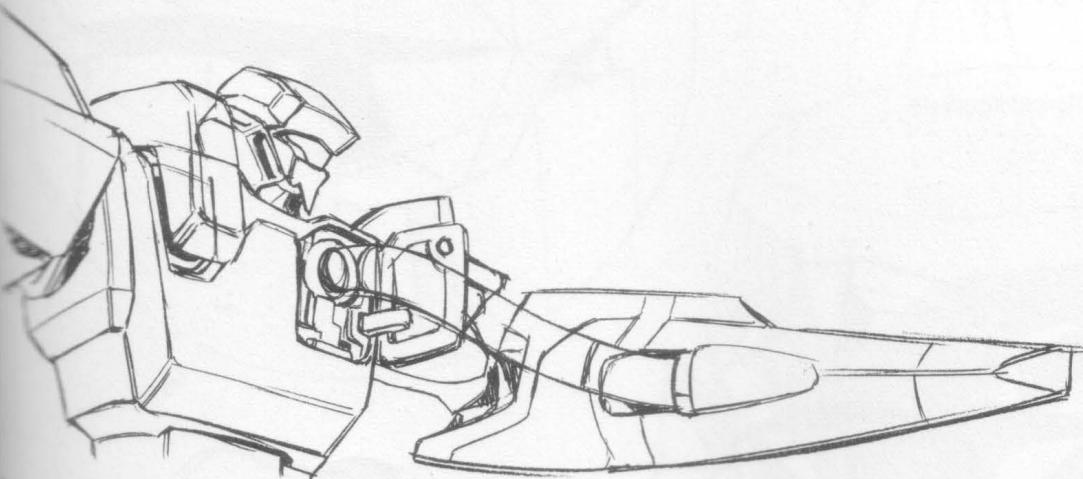
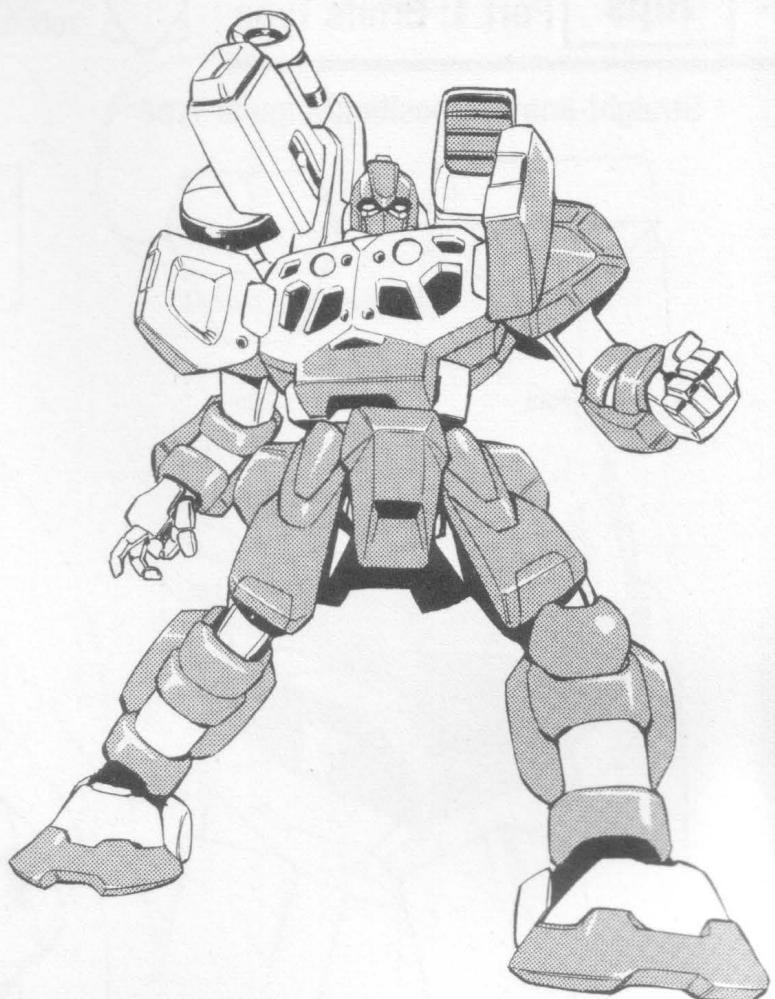
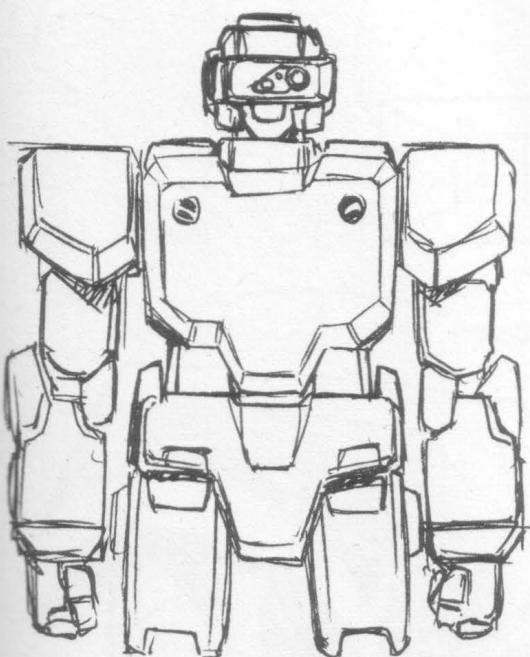


Side



Back

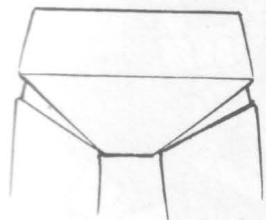




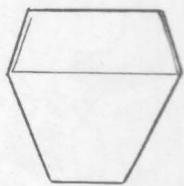


Tends to be comical. Suited to manga-type robots rather than realistic robots.

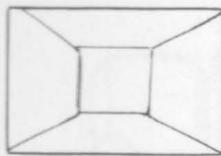
### Straight-line Composition/Angular Type



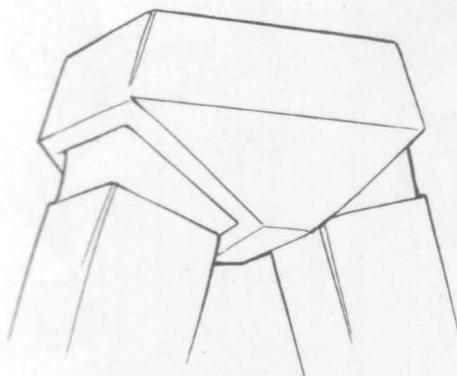
Front



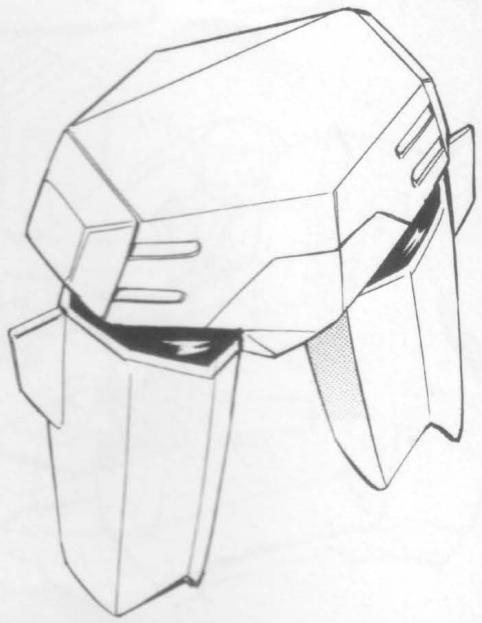
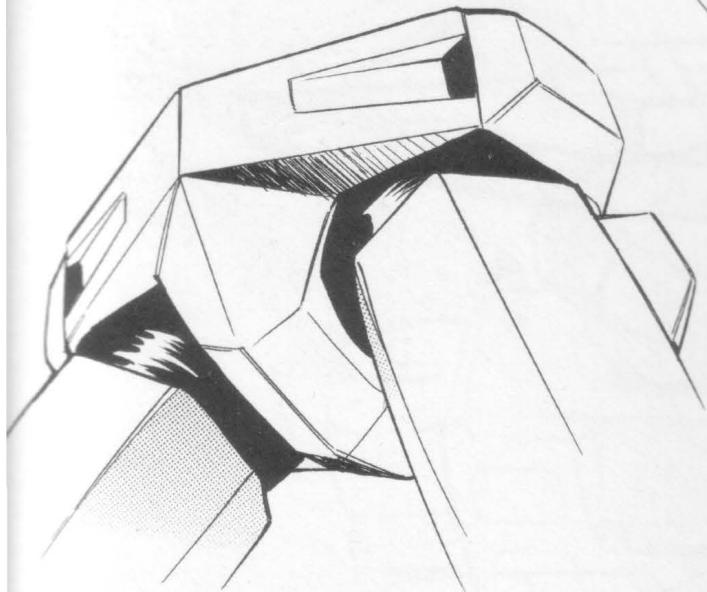
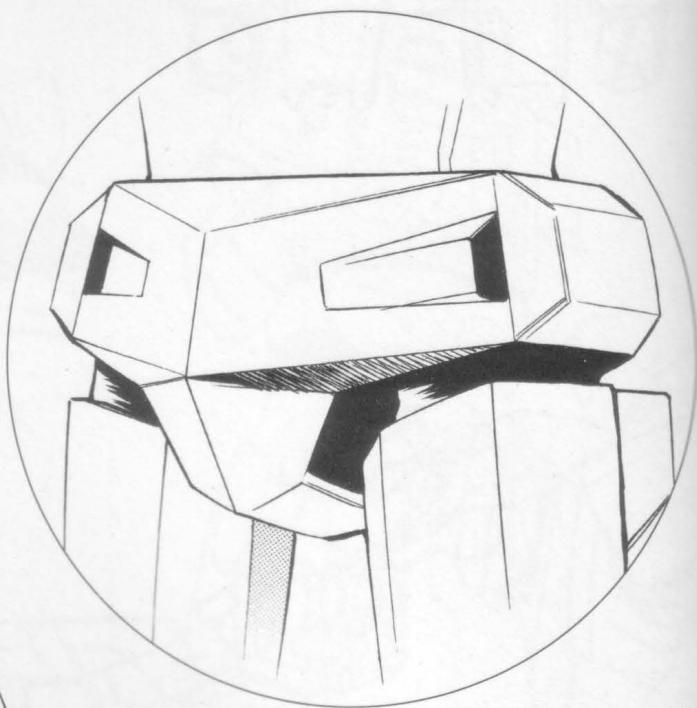
Side



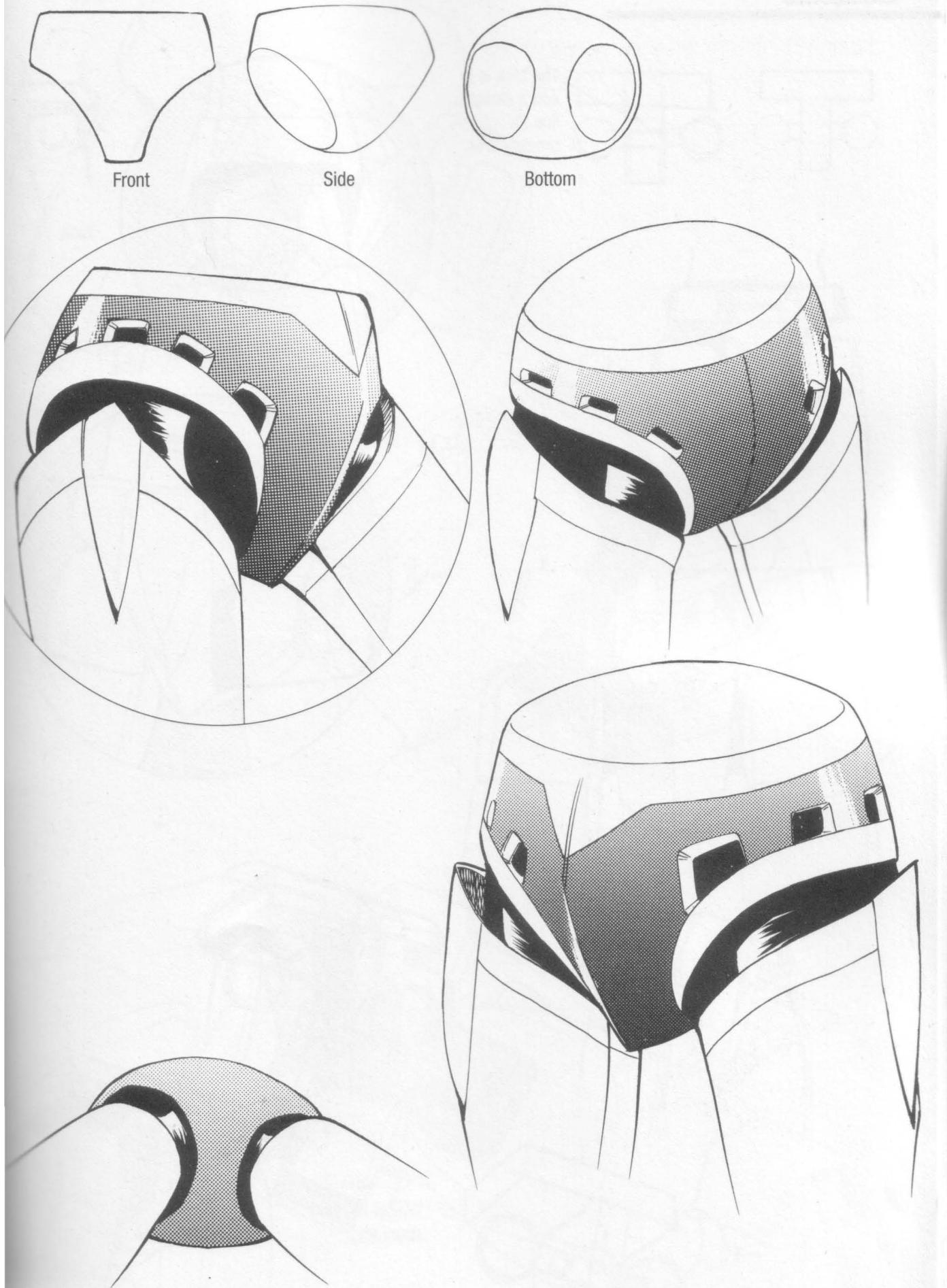
Bottom



Typical structure



## Curved-surface Composition/Spherical Type

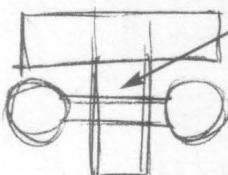
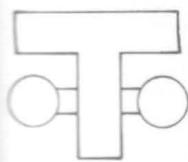


## Hips

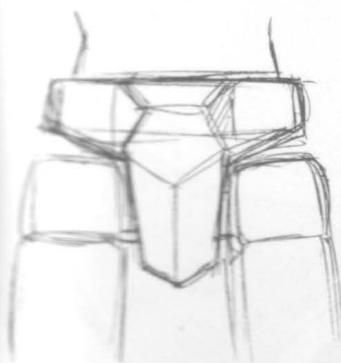
## Part 2: T Type



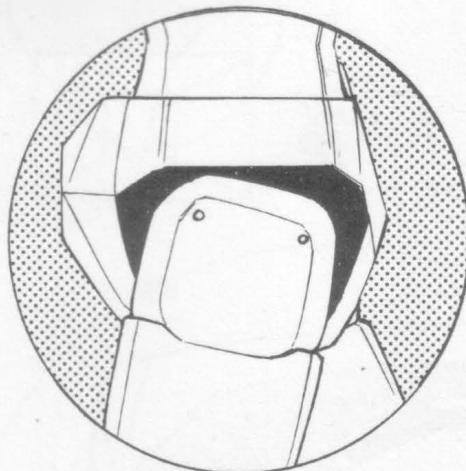
This type is ideal for drawing combat robots.



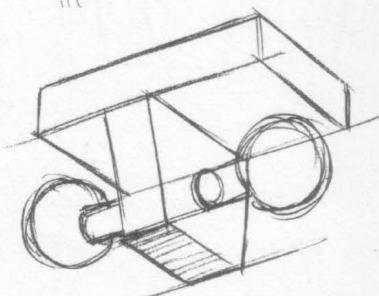
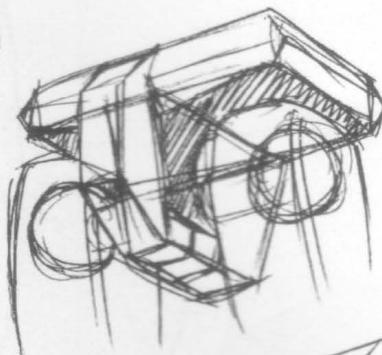
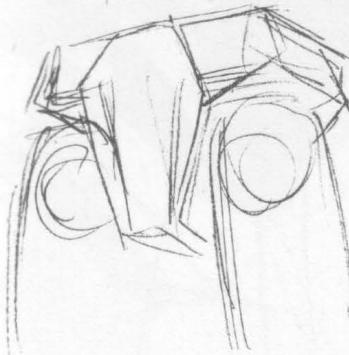
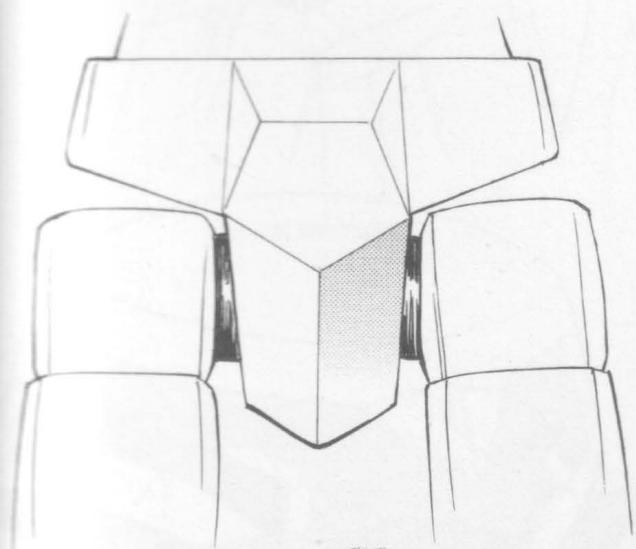
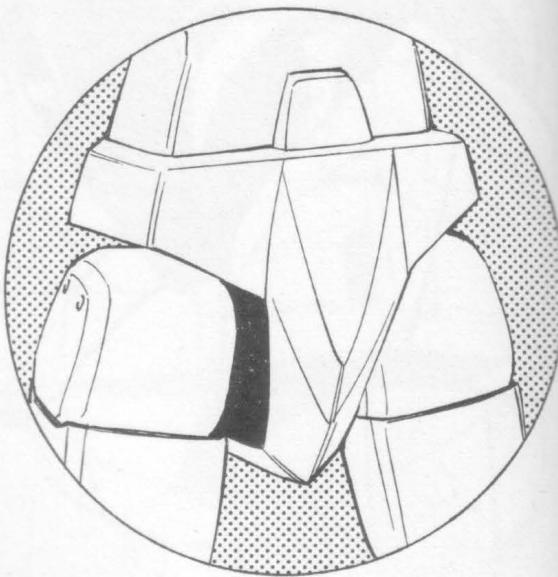
The trick is to add a straight line for reference.



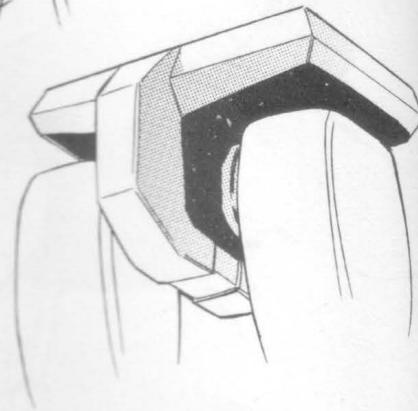
Front

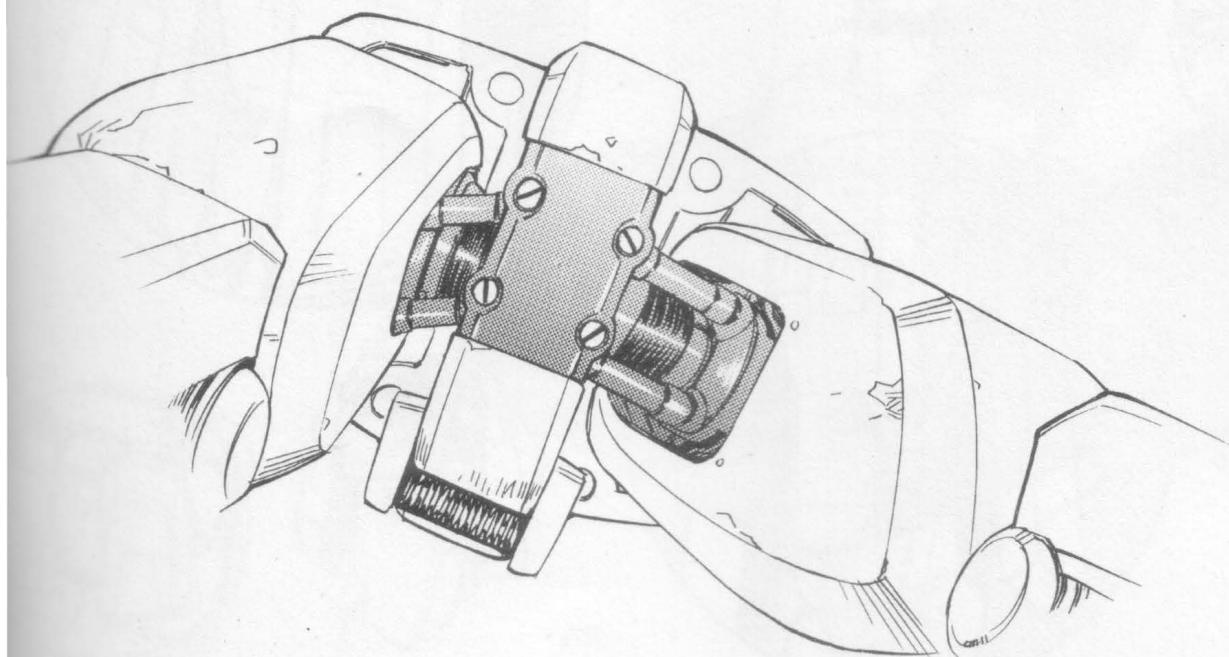
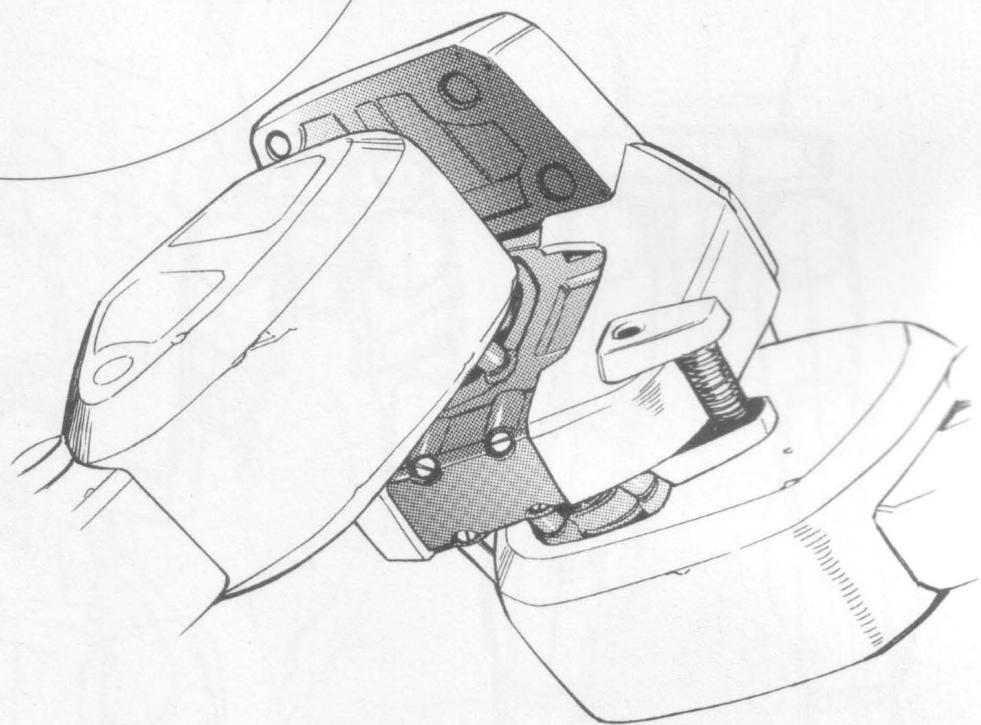
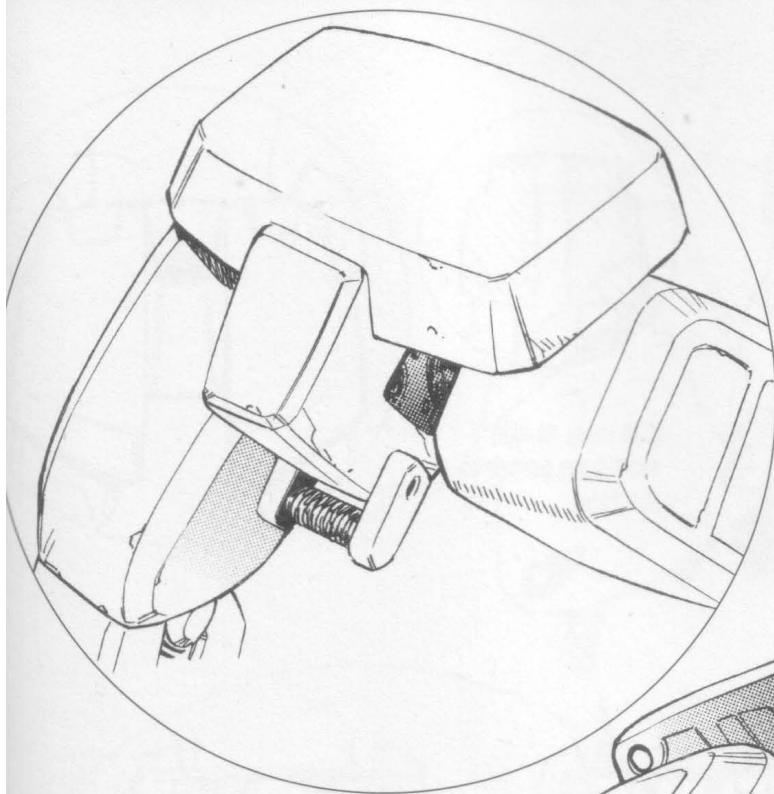


Side

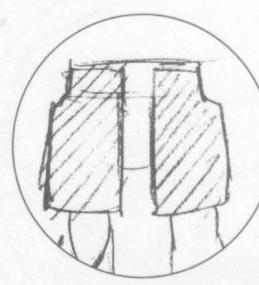
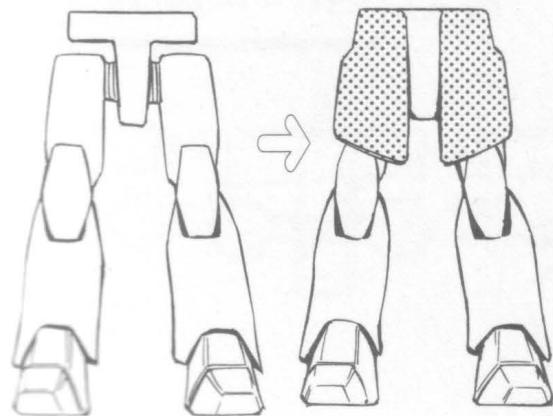


Typical hip joint structure

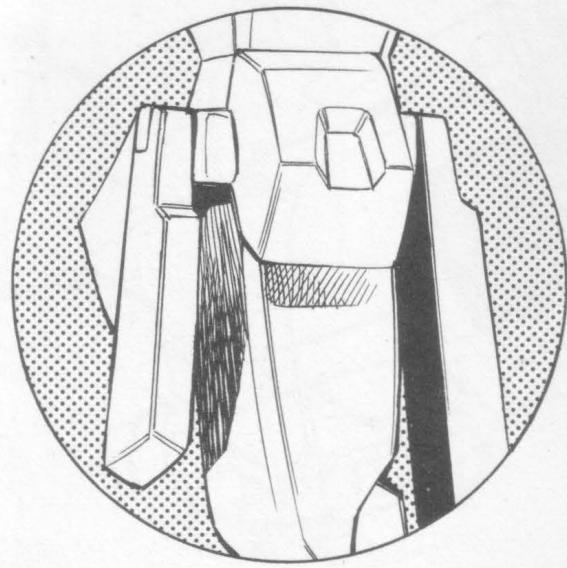
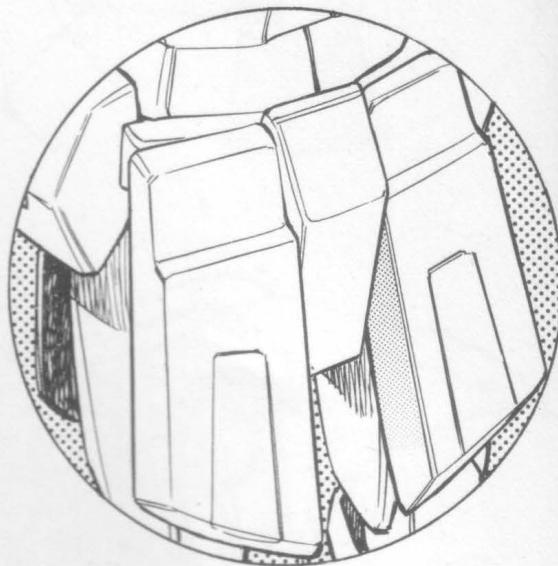
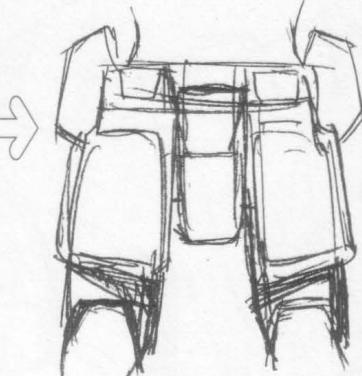
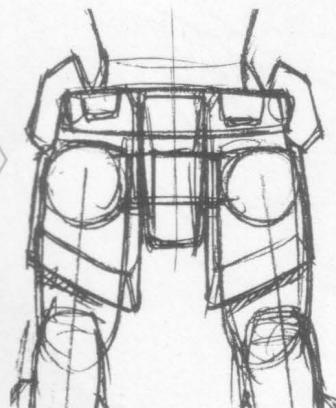
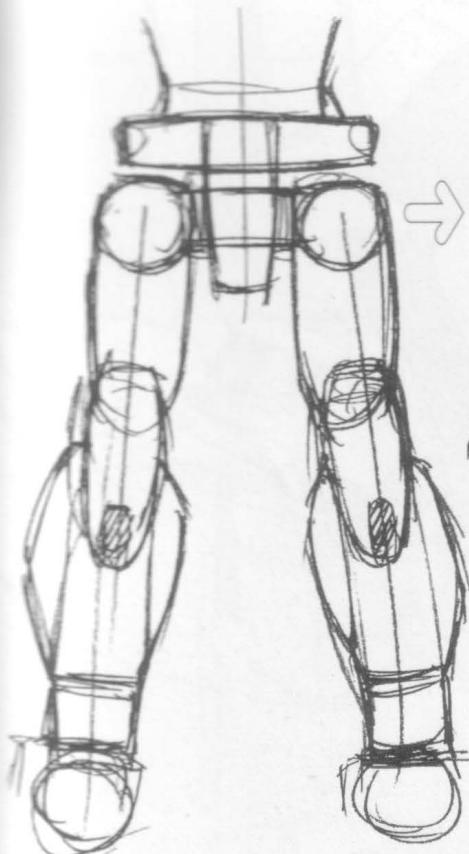
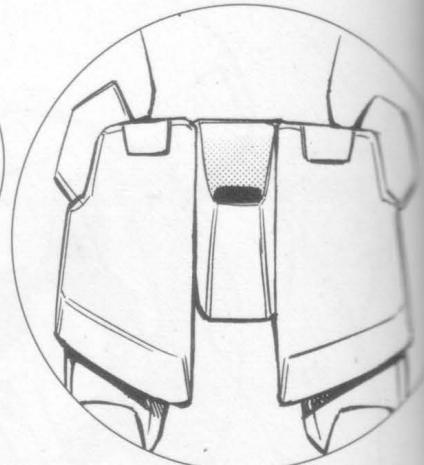


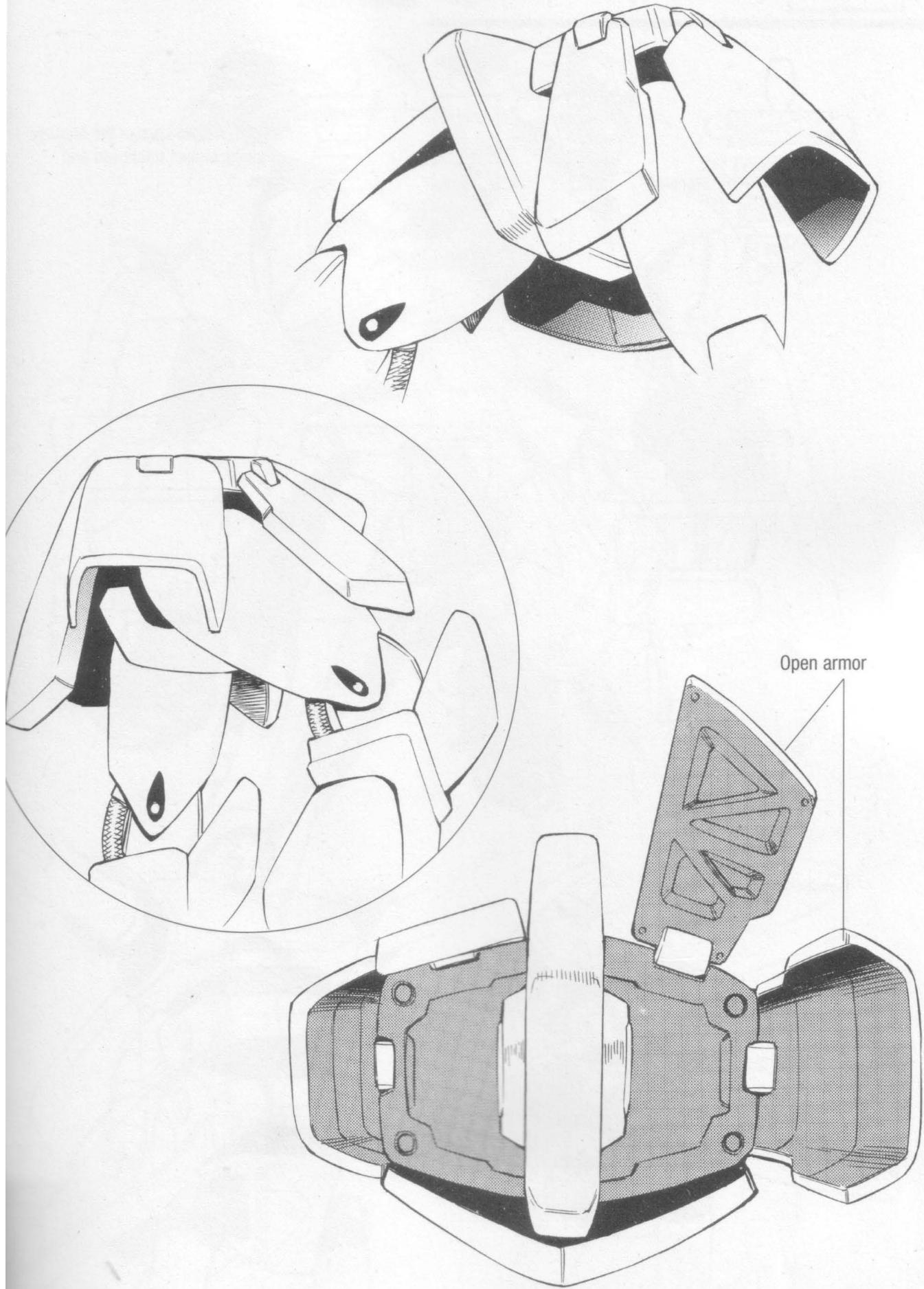


## T Hip Joint Variations



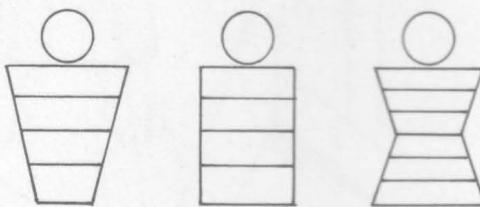
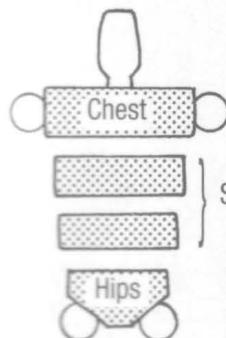
It is easy to add skirt-type armor to the hips.



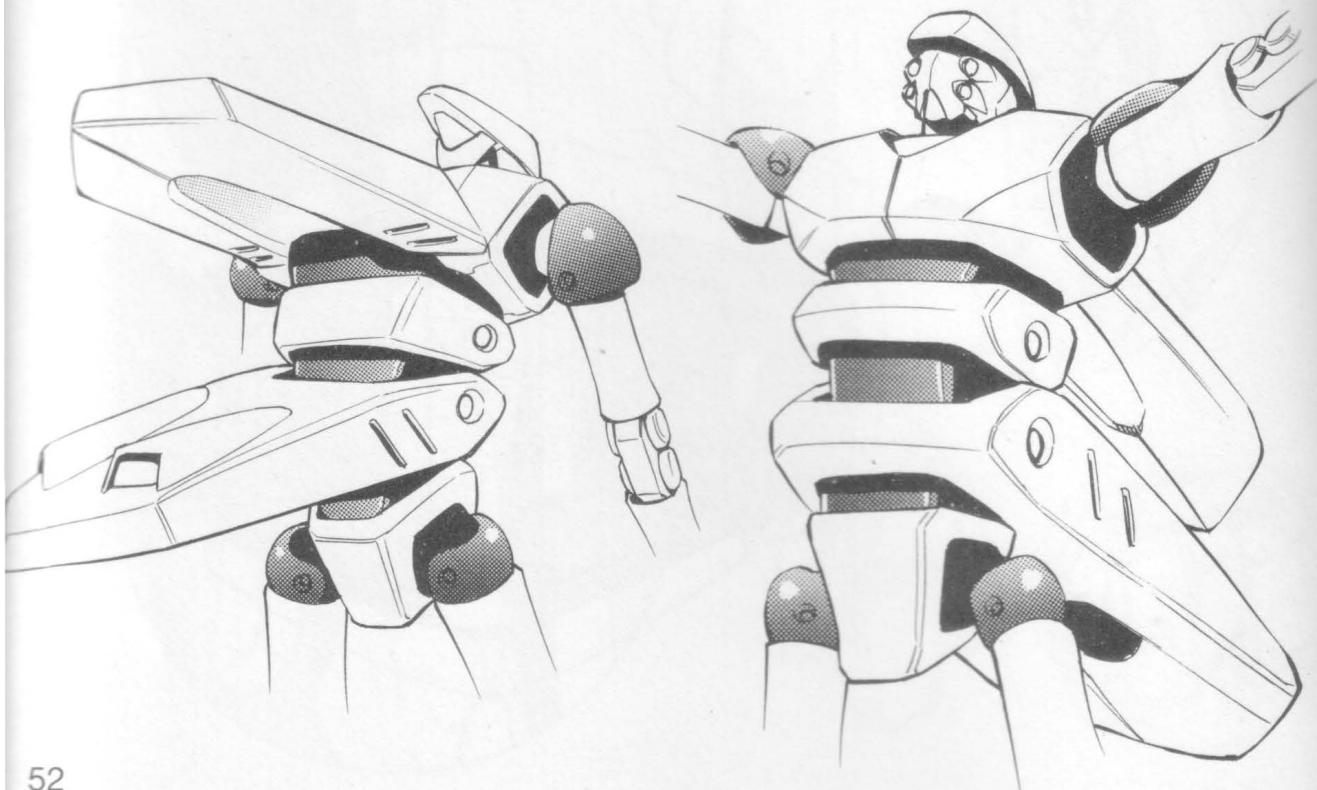
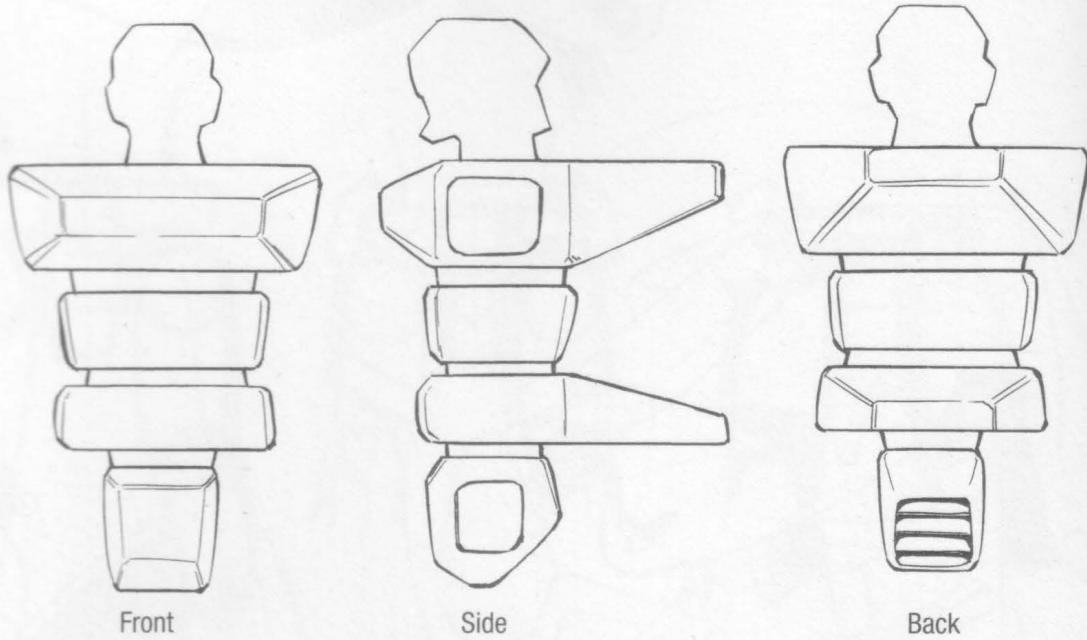


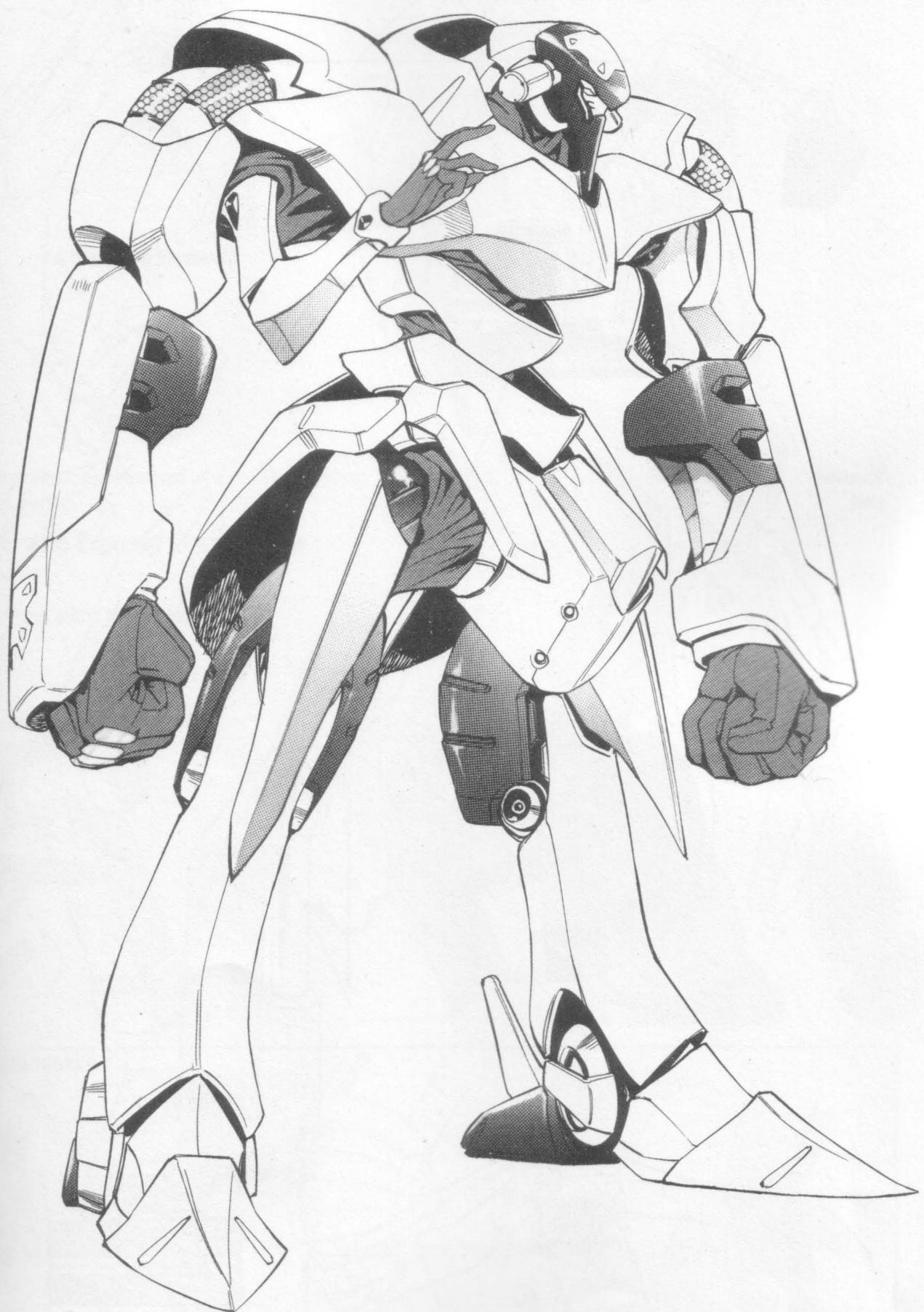
## Trunk Special Body/Centipede Type

Use this body type to design original, unique robots.



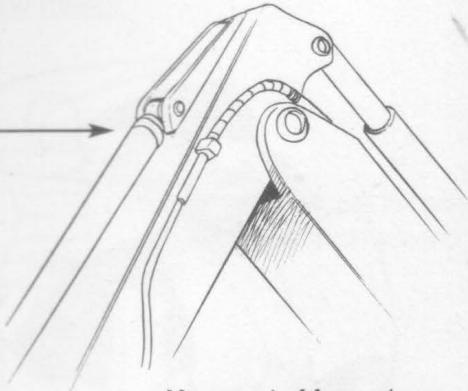
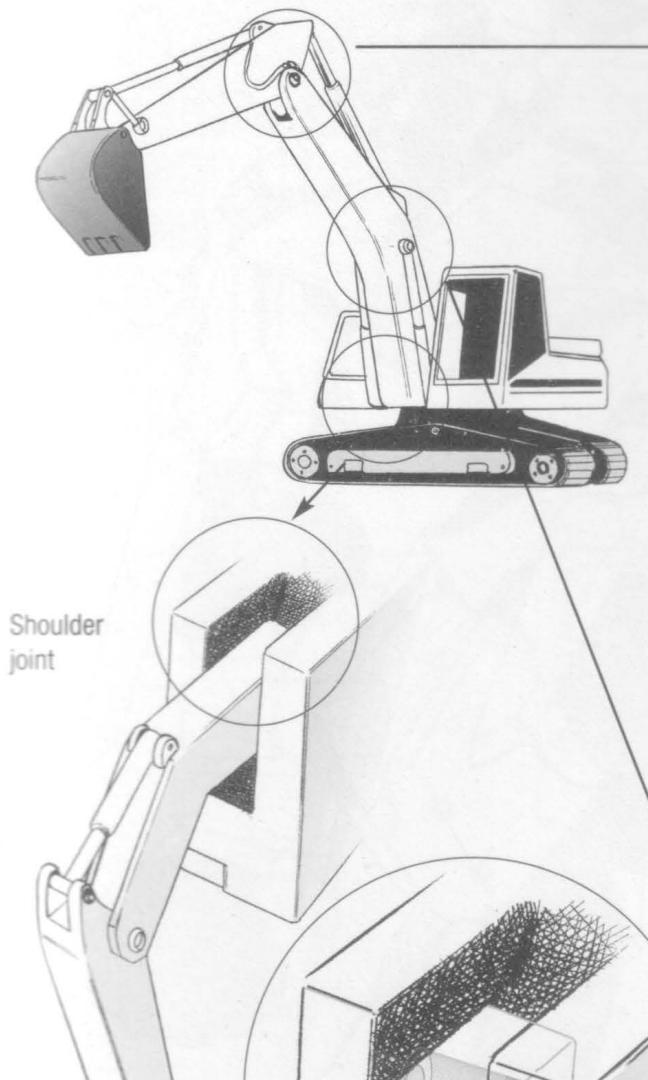
You are free to choose the number of joints, shape, thickness and form.



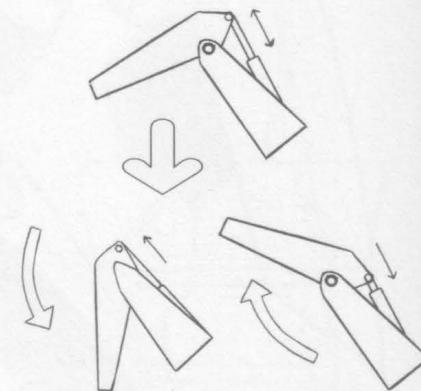


## Shoulder and Elbow Joints

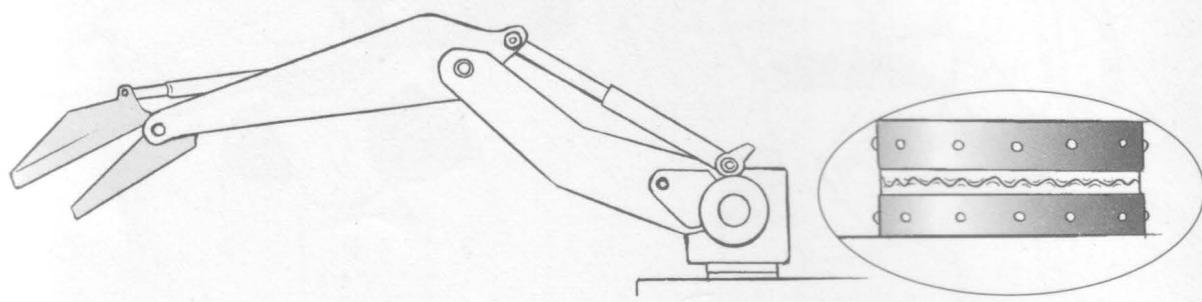
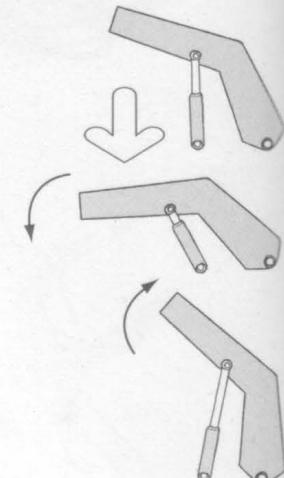
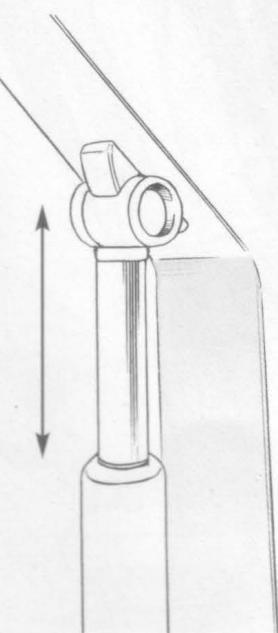
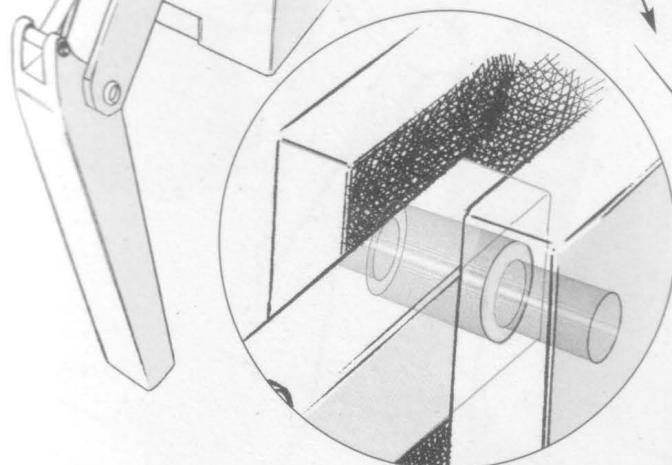
Use the arms of cranes and excavators as a reference.



Movement of forward arm

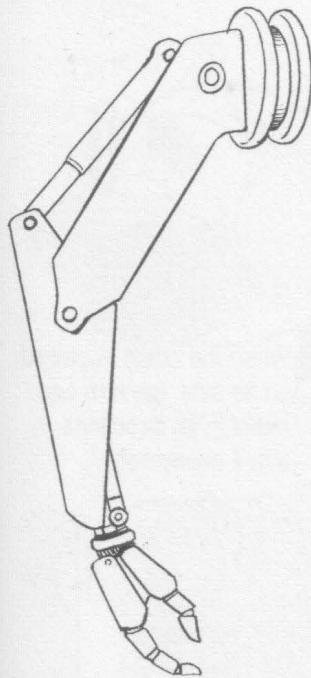


Movement of entire arm

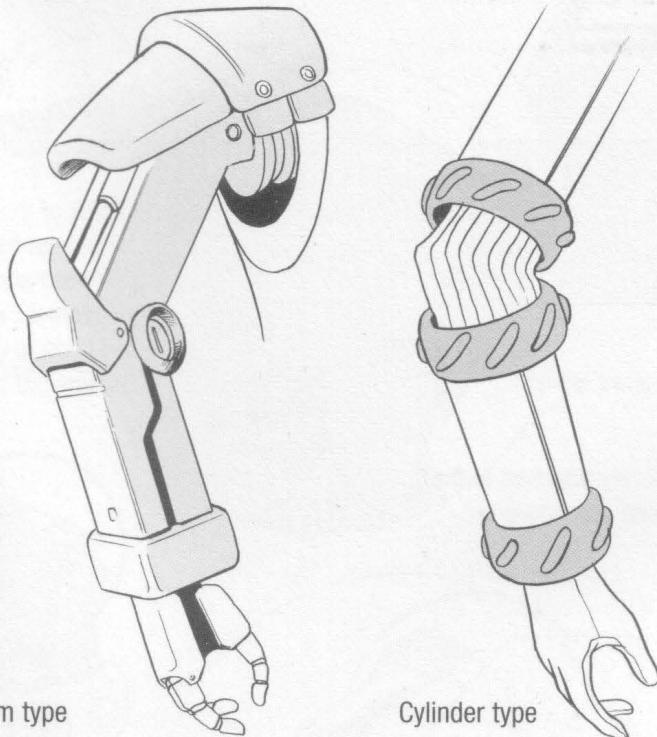


Rotating joint at base

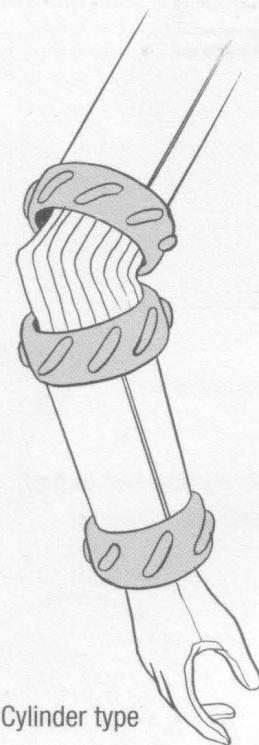
**Arm Forms** They are based on prisms and cylinders.



The arm structure resembles that of a crane.

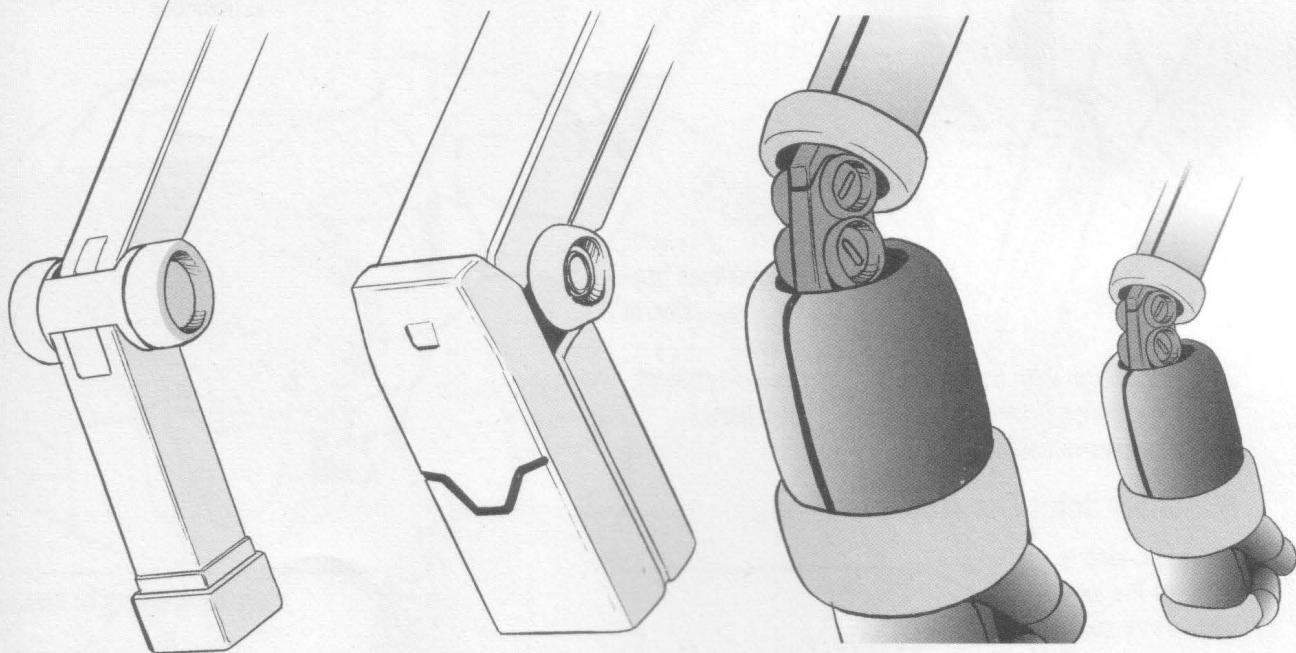


Prism type

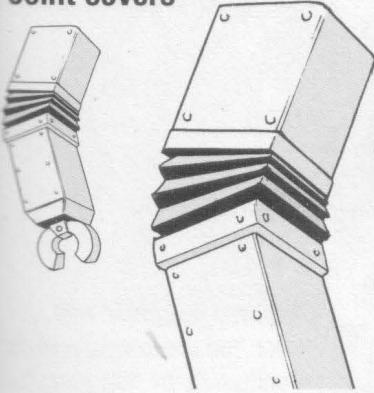


Cylinder type

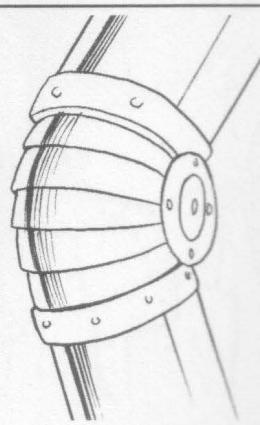
### Arms with Exposed Elbow Joints



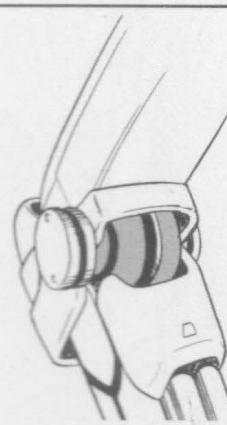
### Joint covers



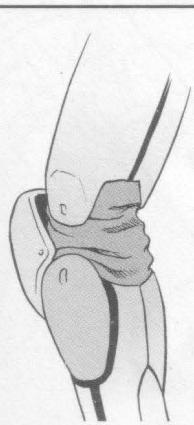
Accordion type



Metal cover

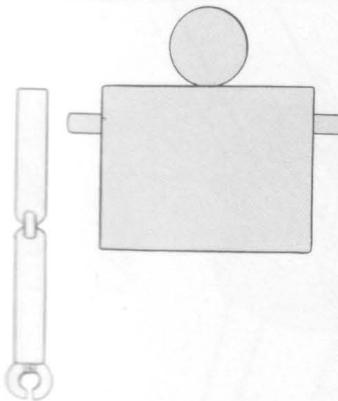


Armor type

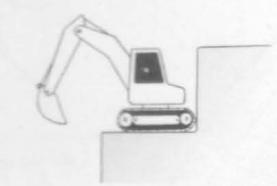
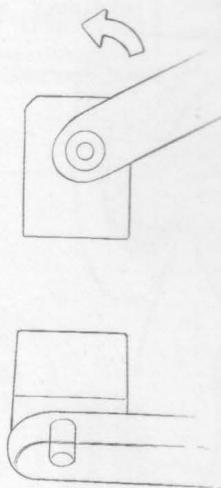


Rubber cover

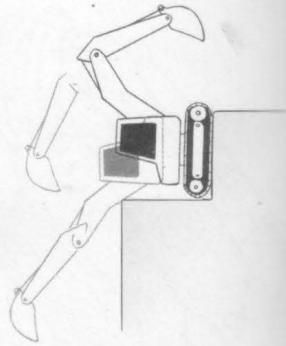
# Shoulders



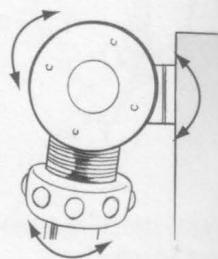
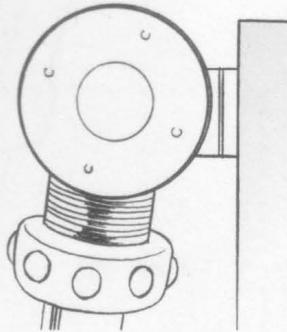
The arm is merely attached to the support and can only move up and down.



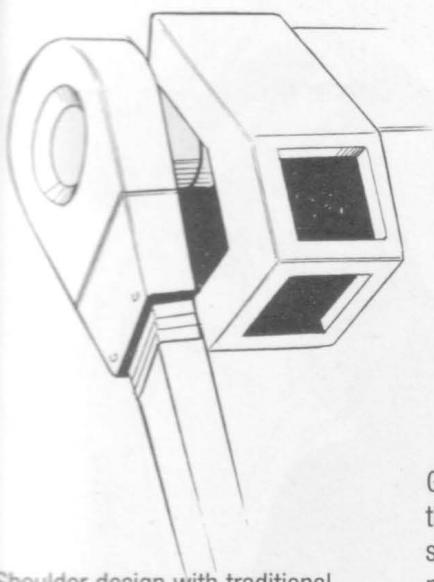
Think of the arm as crane sitting on top of a shoulder. Forward and backward movement is possible in addition to upward and downward movement.



When the crane is placed on its side, the arm can move in all directions, albeit awkwardly.

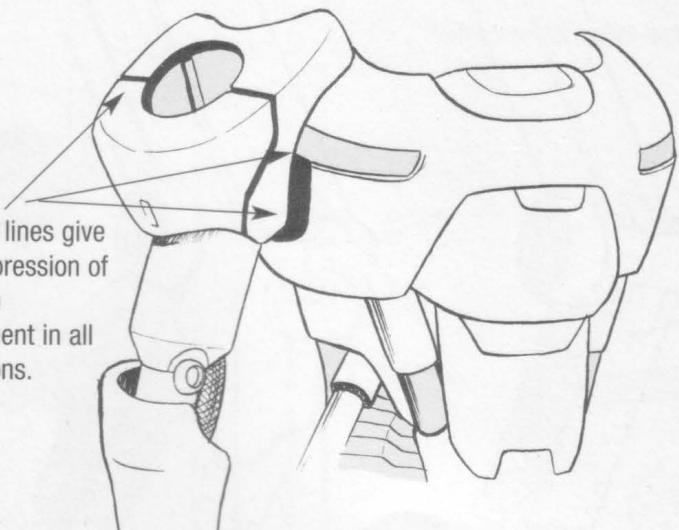


A shoulder joint emphasizing rotation. Crane-like movement is possible.



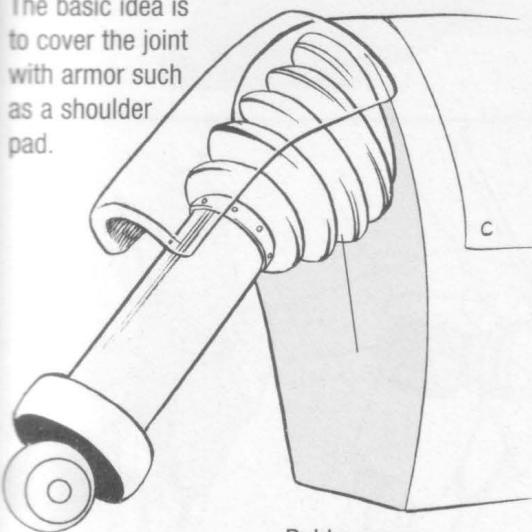
Shoulder design with traditional function allowing upward and downward movement only.

Groove lines give the impression of smooth movement in all directions.

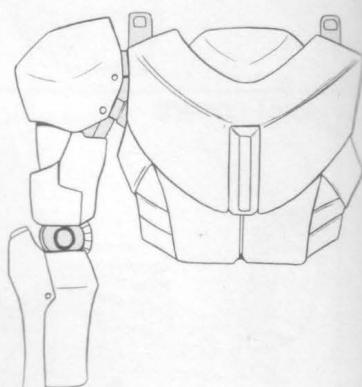


## Shoulder Joint Covers

The basic idea is to cover the joint with armor such as a shoulder pad.

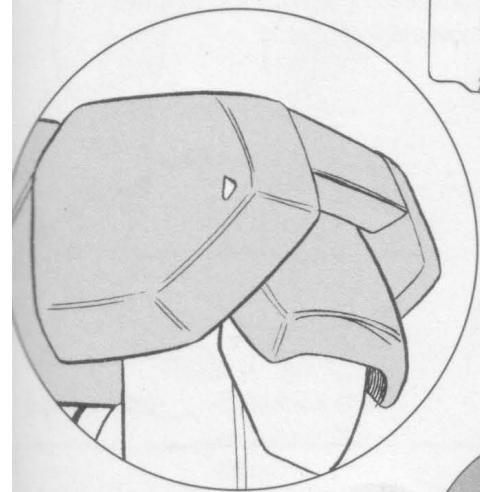
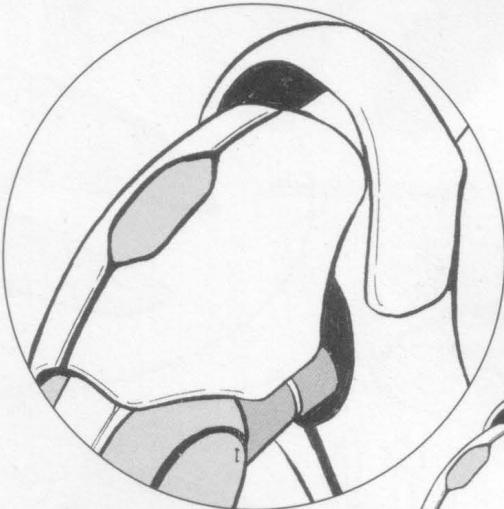
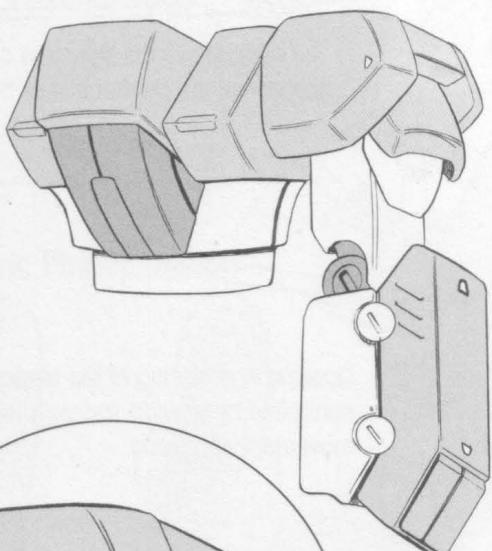
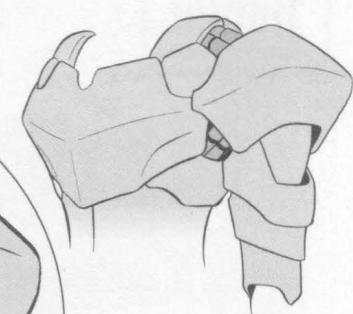
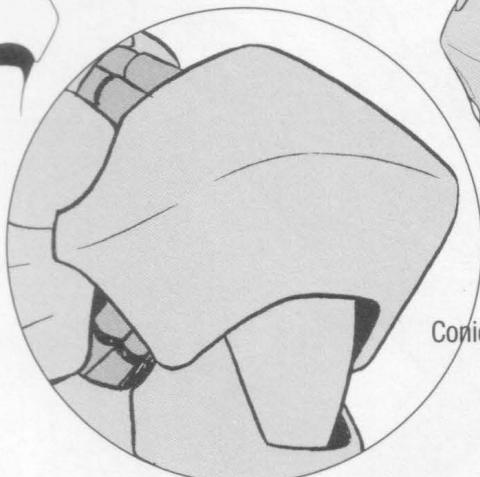
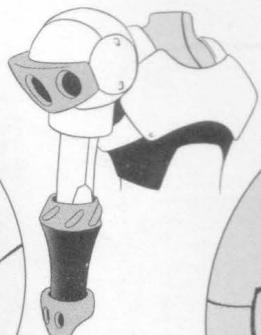
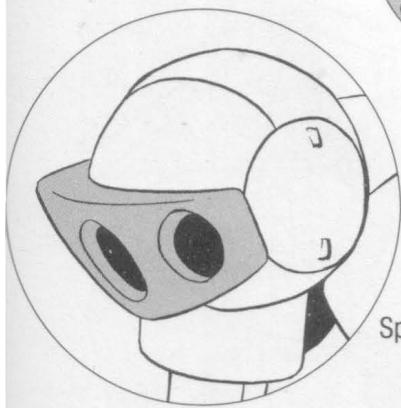


Rubber cover



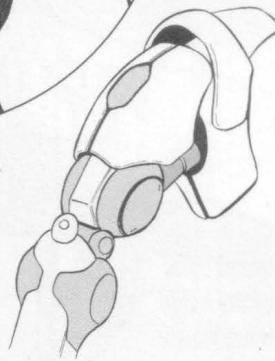
Cover the shoulders with armor. You can create a sense of uniformity by designing the arms and upper body at the same time.

## Shoulder Pads/Armor

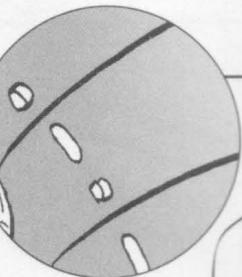


Square type

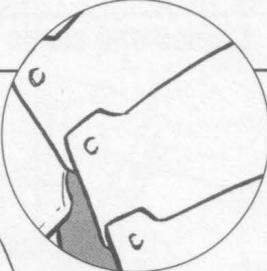
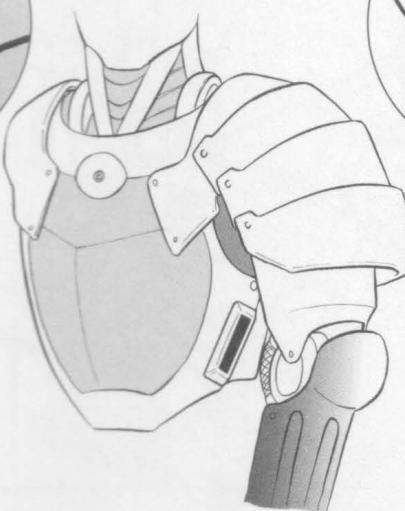
Belt and shield type



## Armor shoulder pads

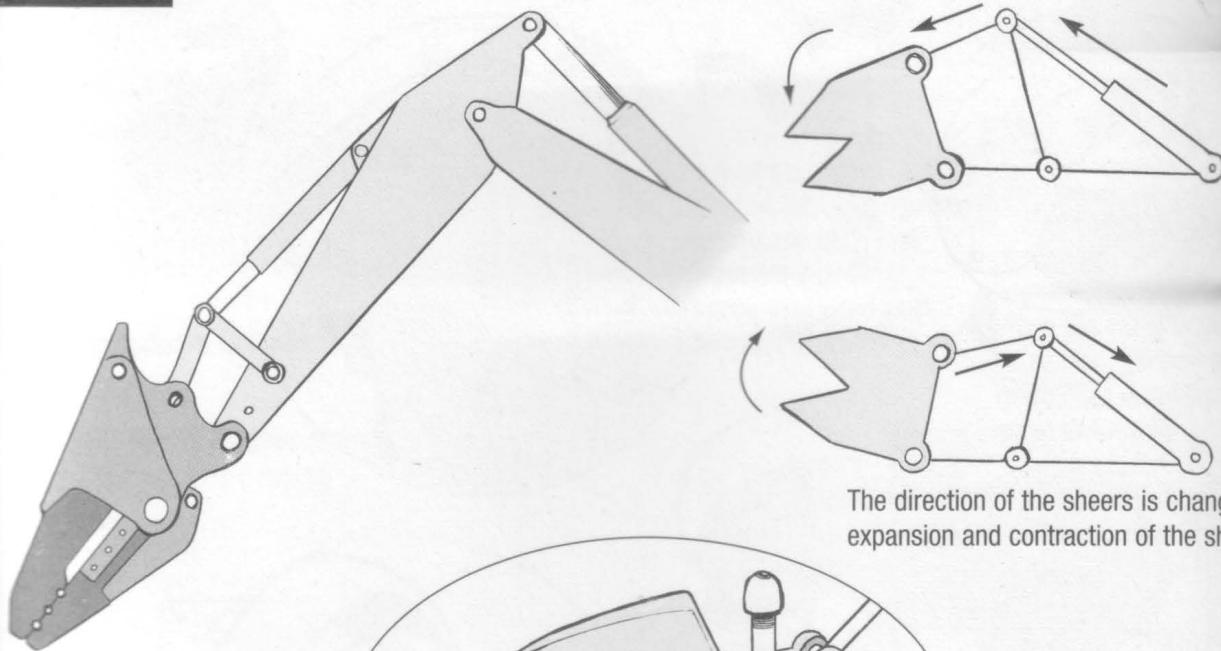


Tied  
together  
with string

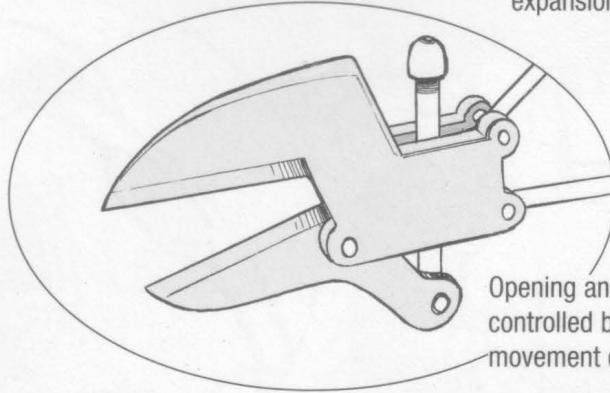


Affixed with  
rivets

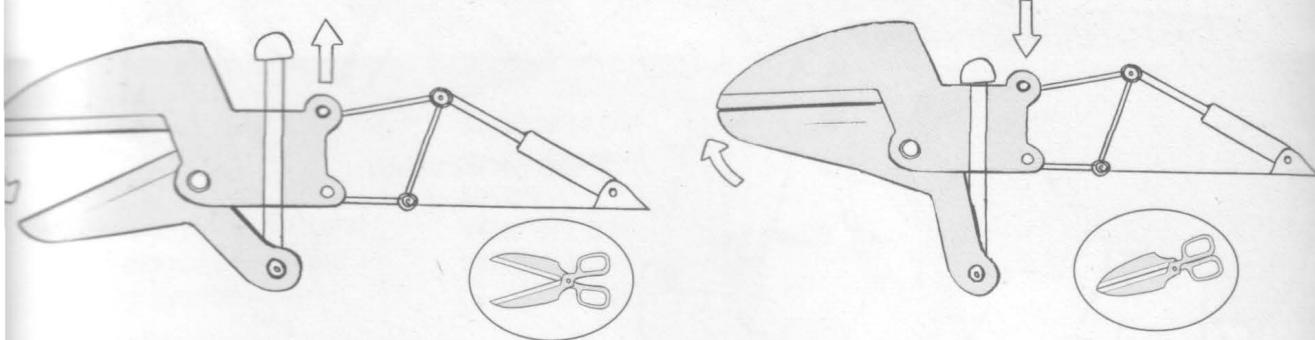
## Hands



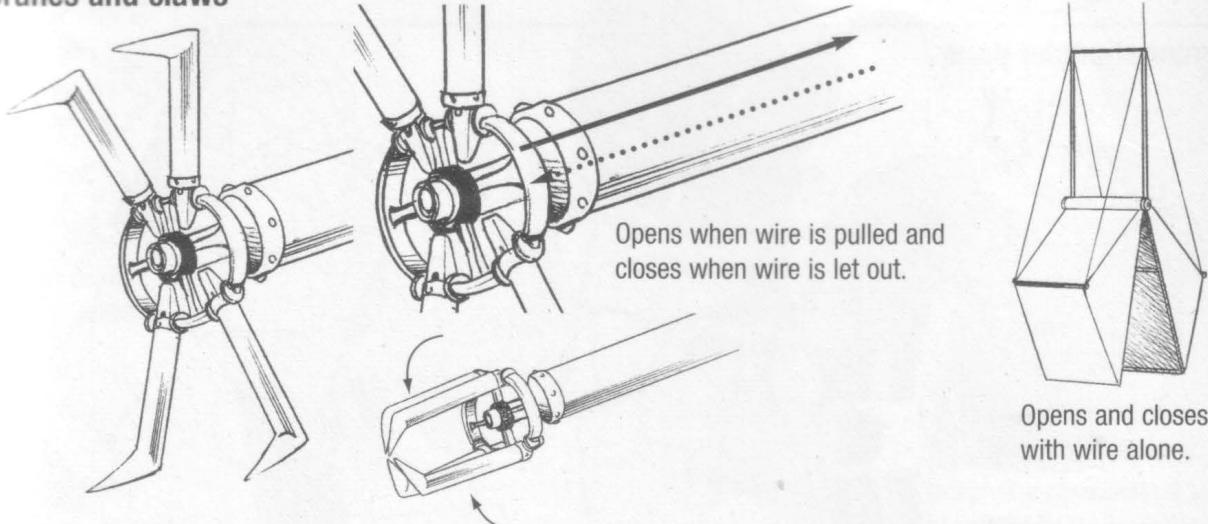
The direction of the sheers is changed by expansion and contraction of the shaft.

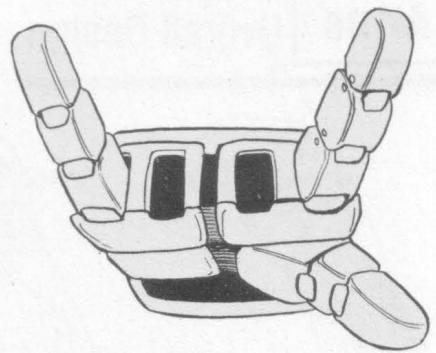
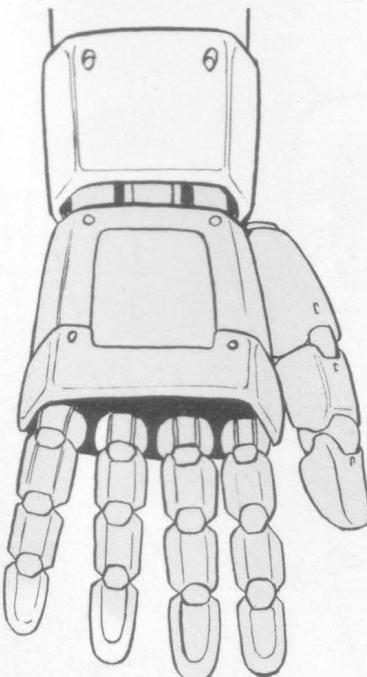
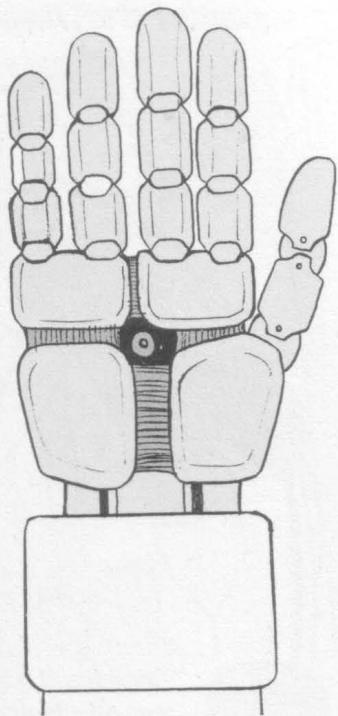


Opening and closing of the blades is controlled by upward and downward movement of pistons.

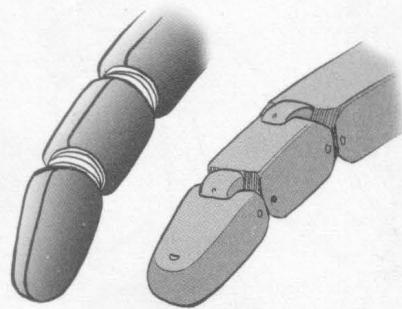


## Cranes and claws

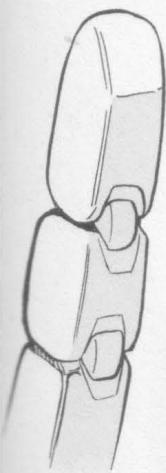




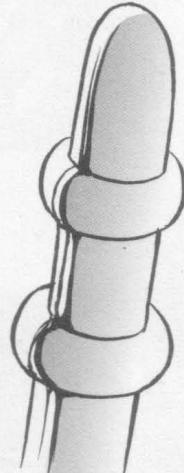
Fingers are sometimes  
detachable.



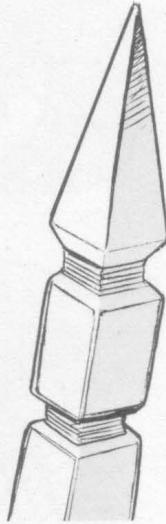
### Basic Finger Design



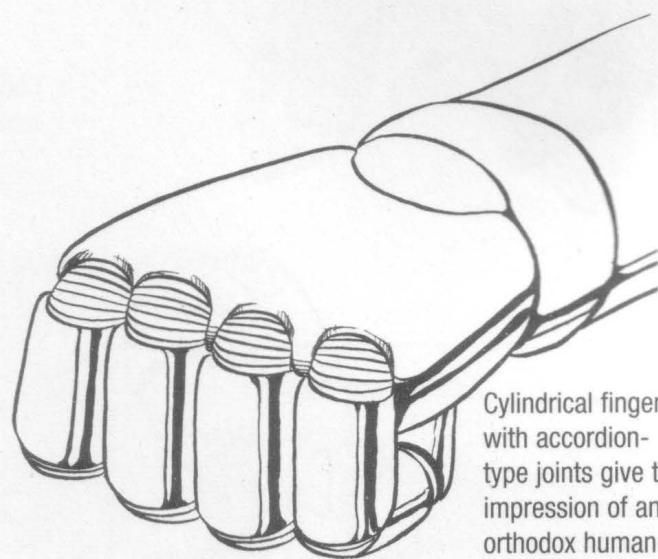
Square base



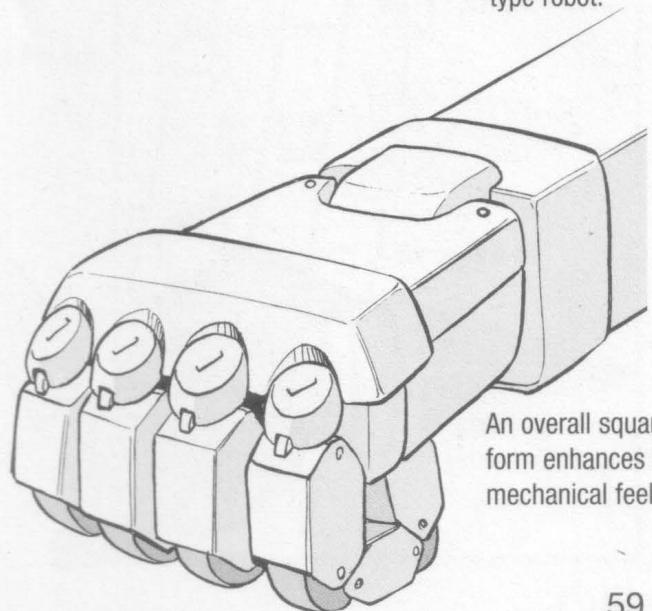
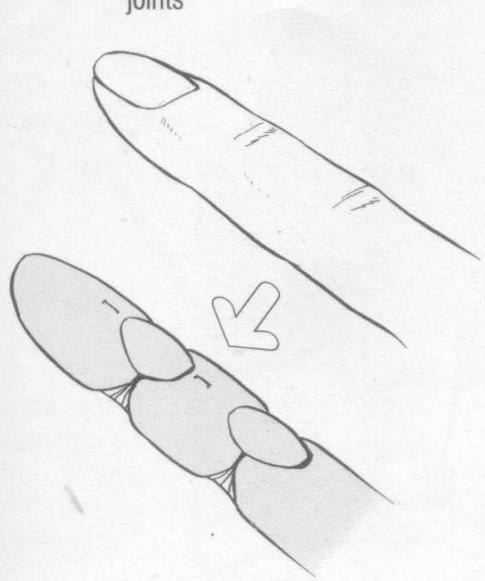
Cylindrical base  
with enlarged  
joints



Conical cone  
type

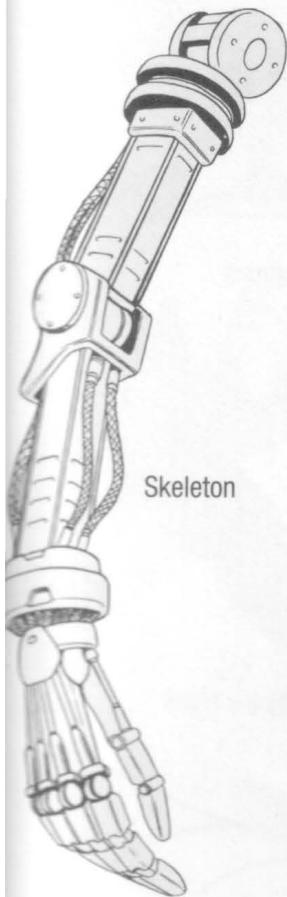


Cylindrical fingers  
with accordion-  
type joints give the  
impression of an  
orthodox human-  
type robot.

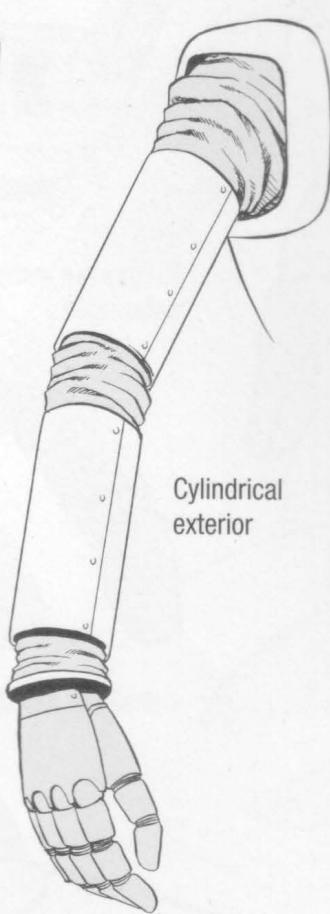


An overall square  
form enhances the  
mechanical feel.

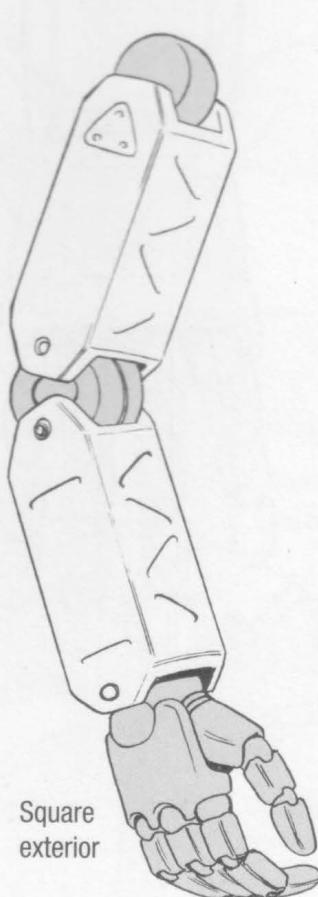
## Arms Overall Design



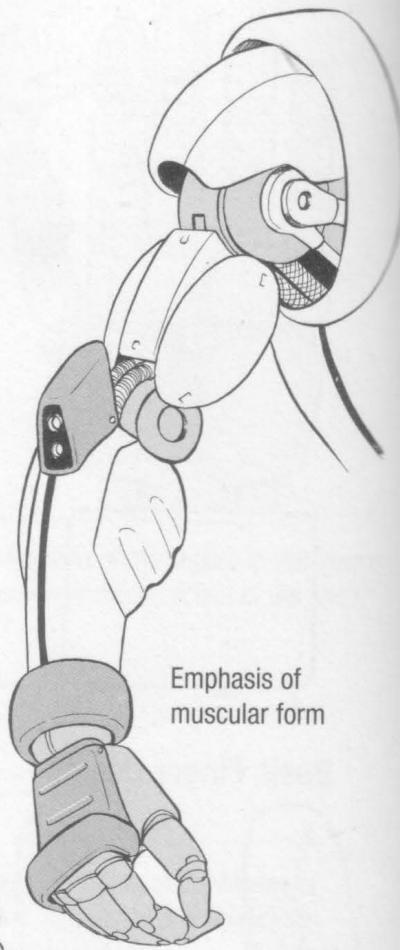
Skeleton



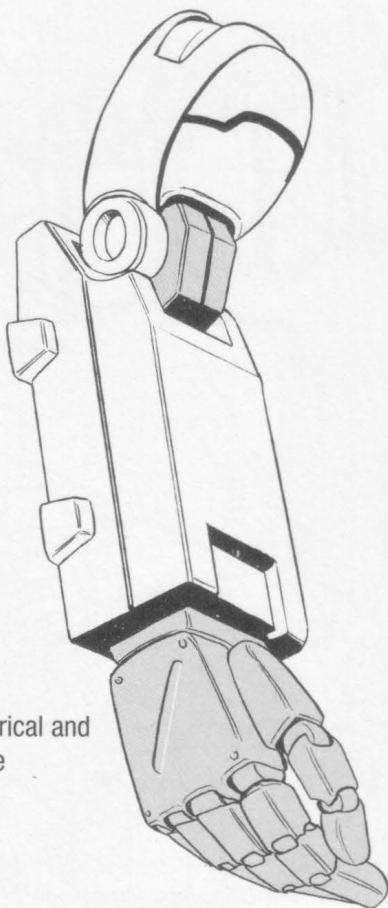
Cylindrical exterior



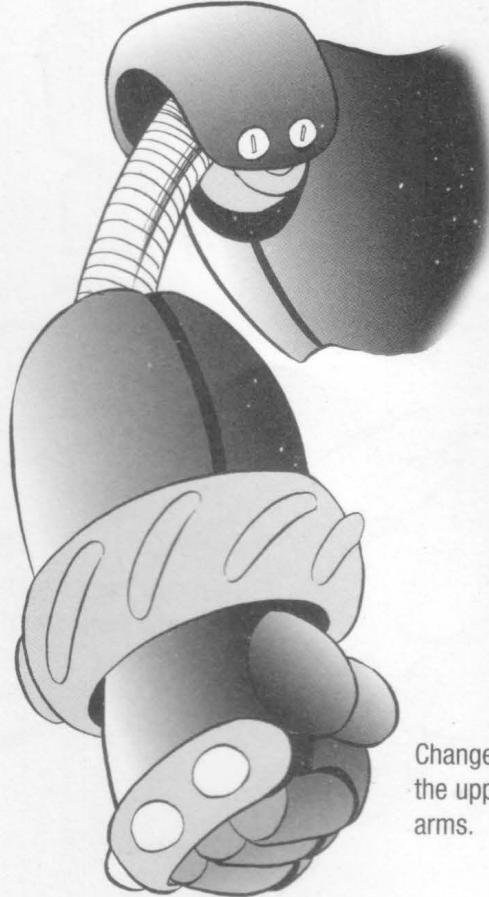
Square exterior



Emphasis of muscular form



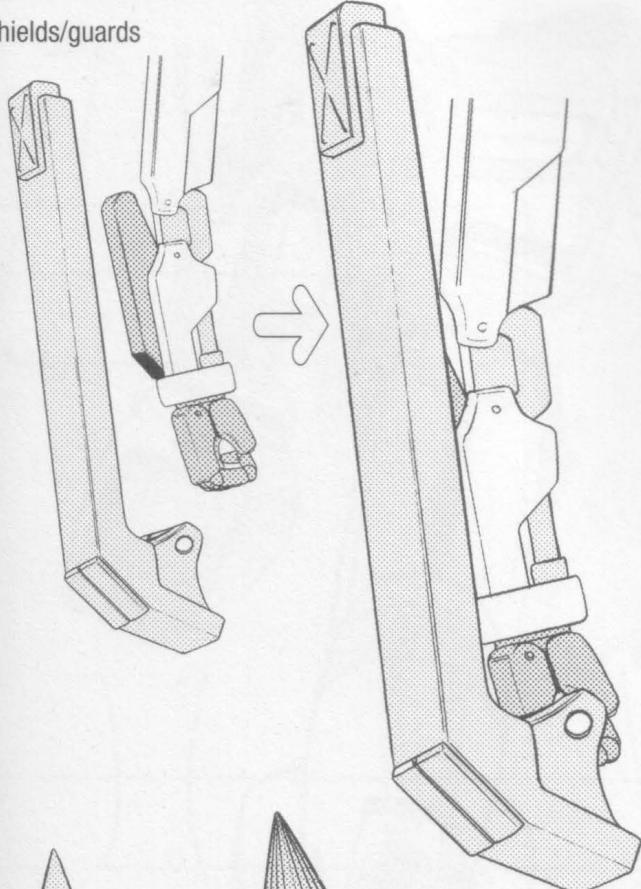
Cylindrical and square



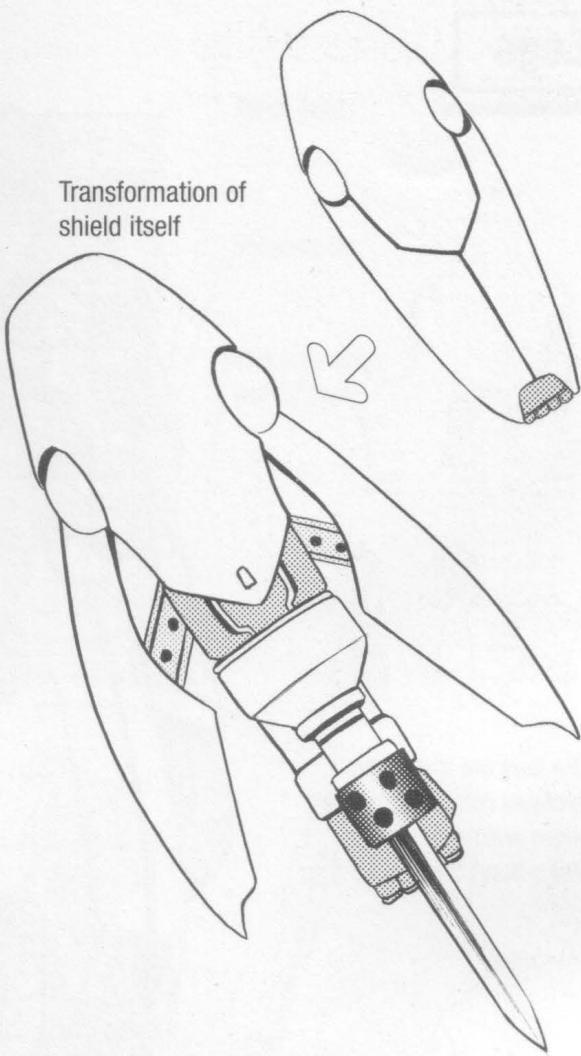
Change the girth of the upper and lower arms.

## Optional Parts Variations

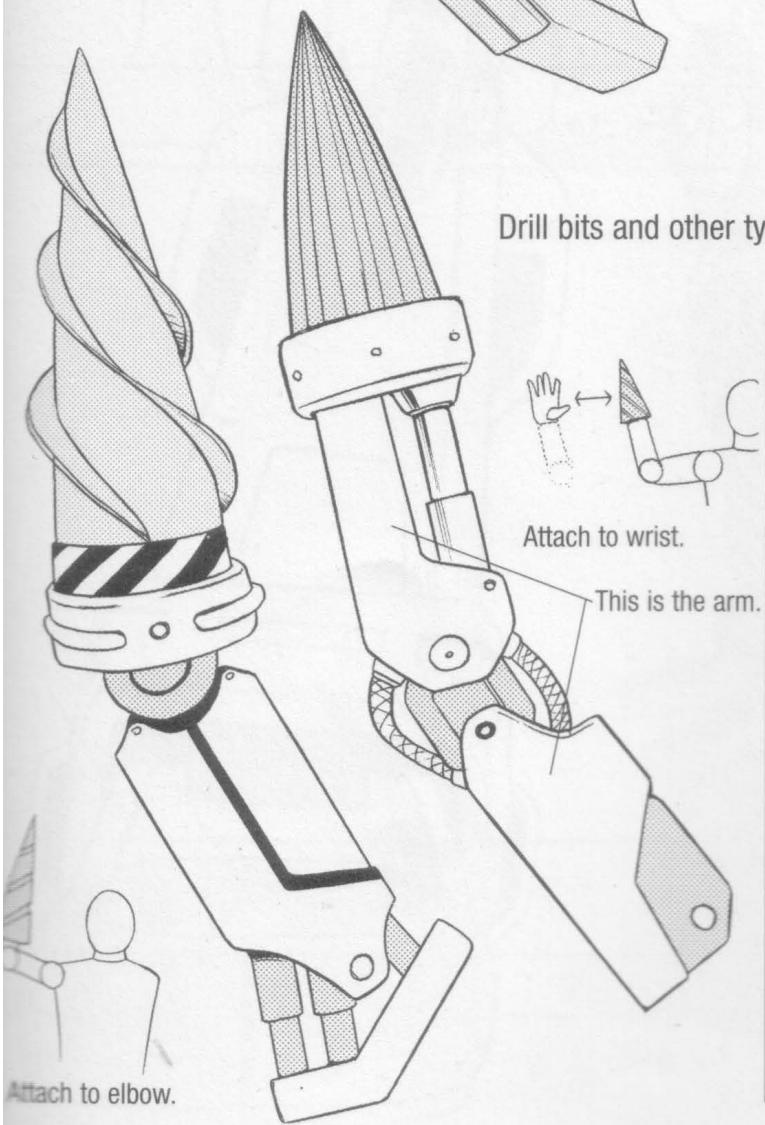
### Shields/guards



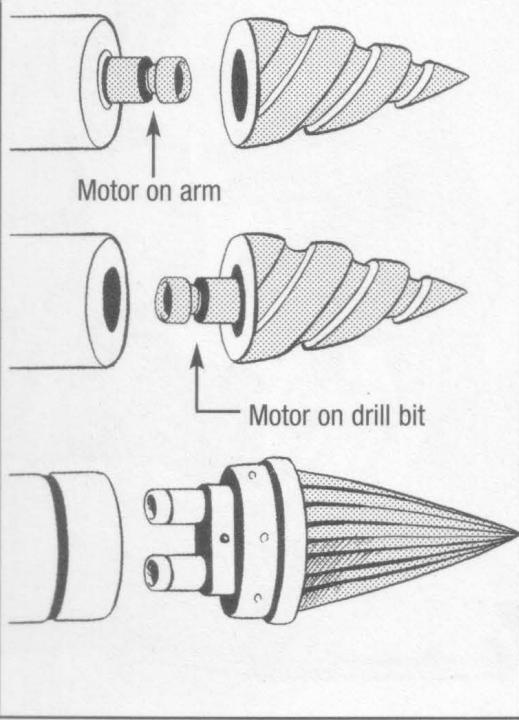
Transformation of shield itself



### Drill bits and other types of arms

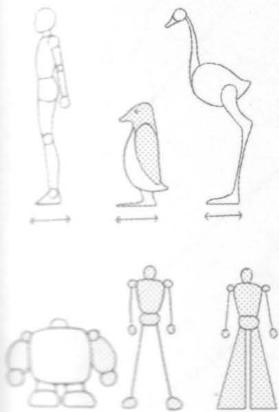


### Joint variations

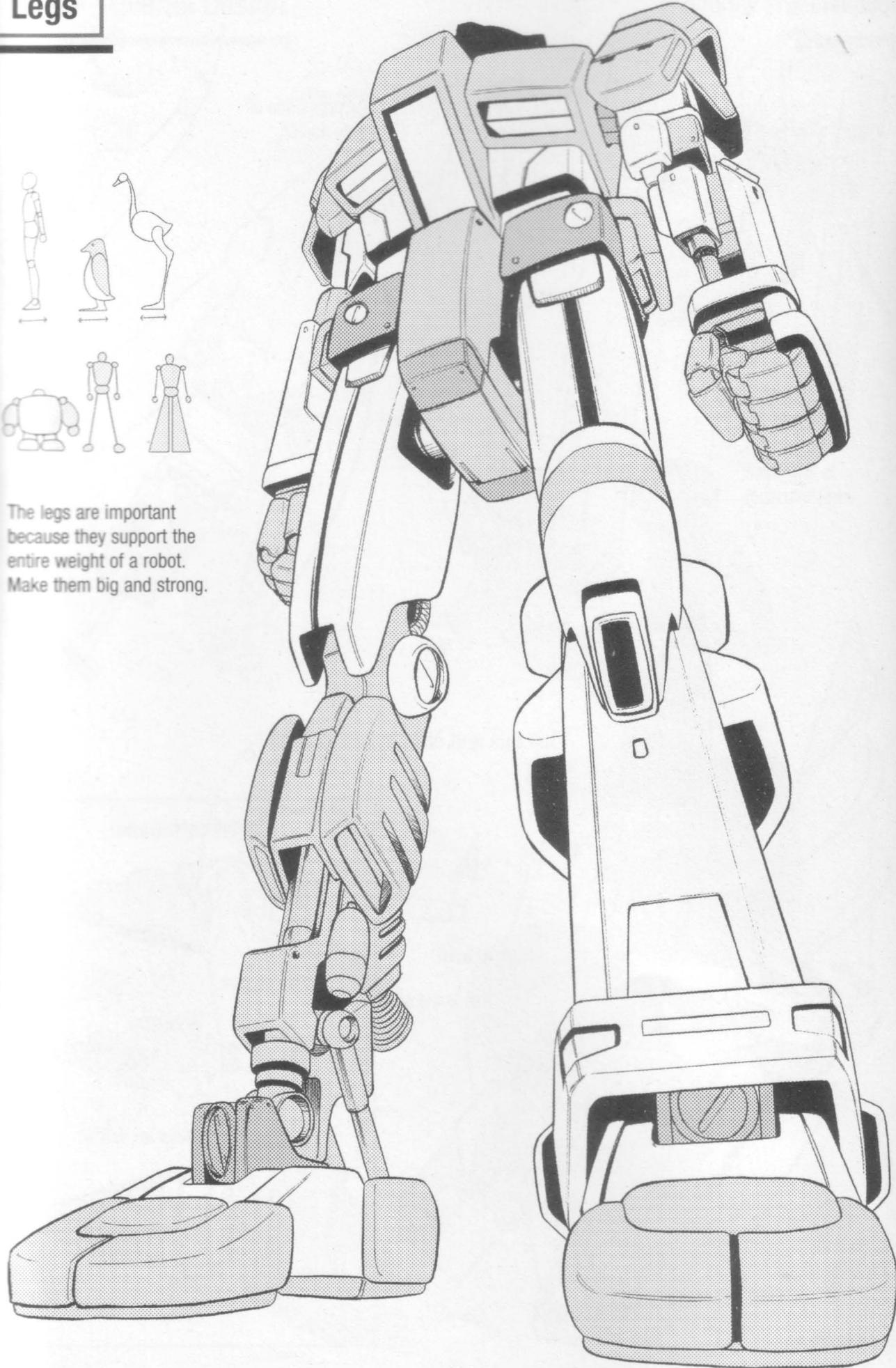


Attach to elbow.

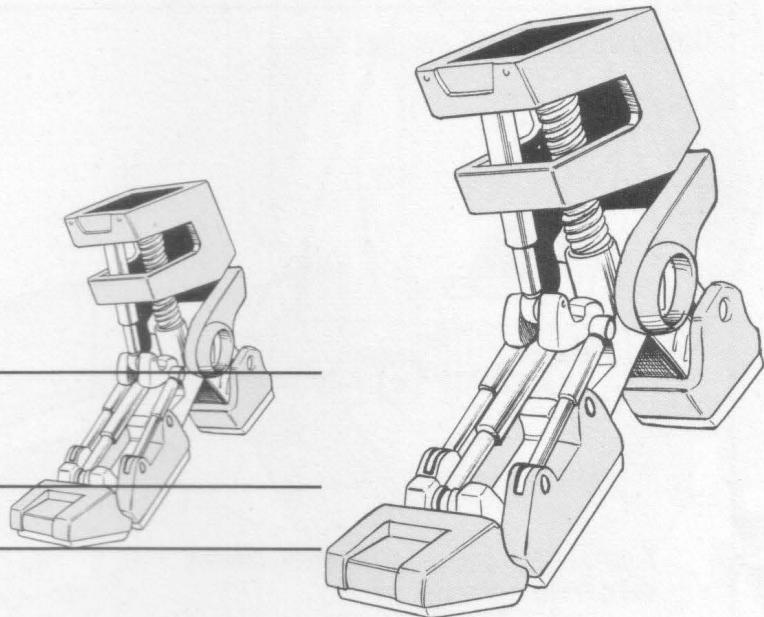
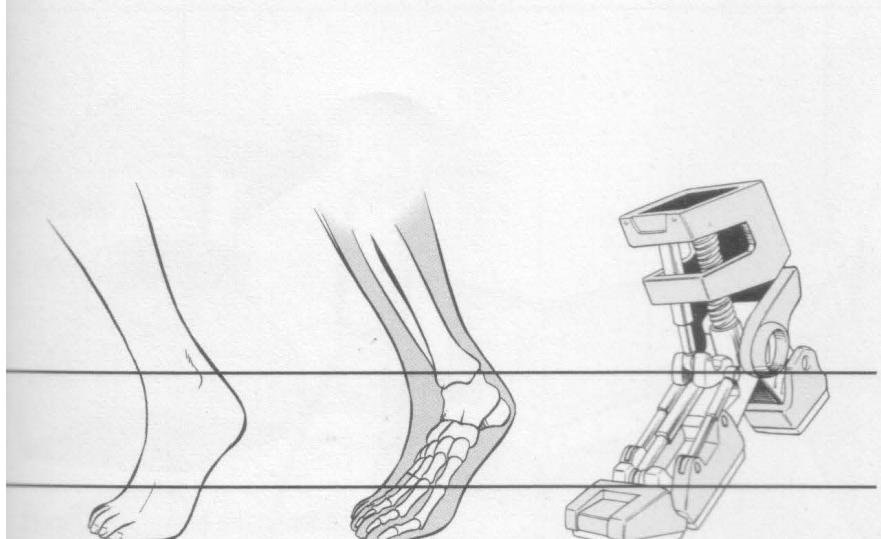
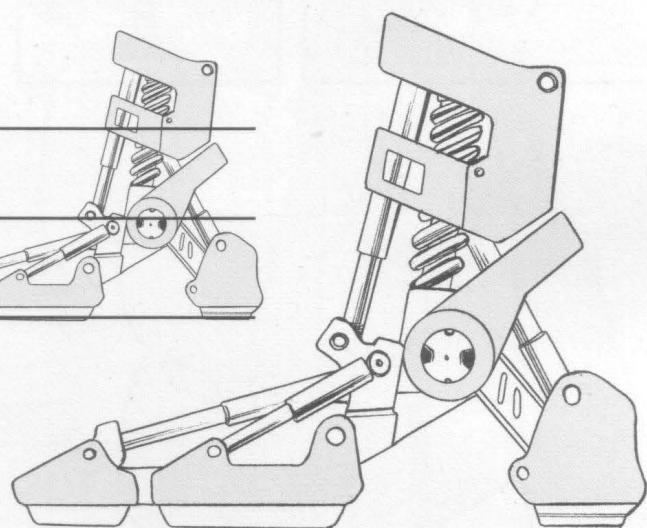
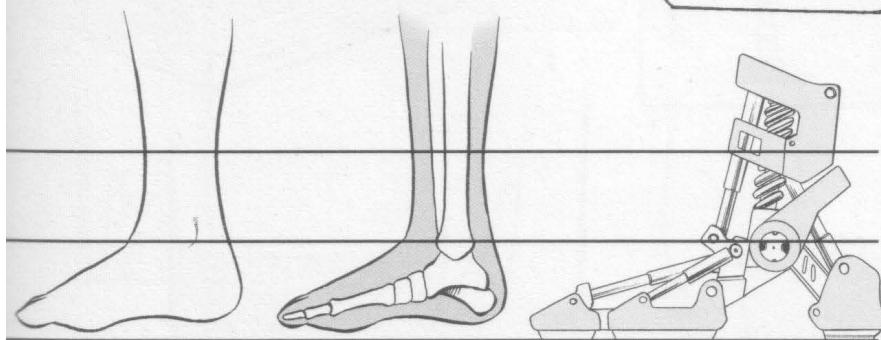
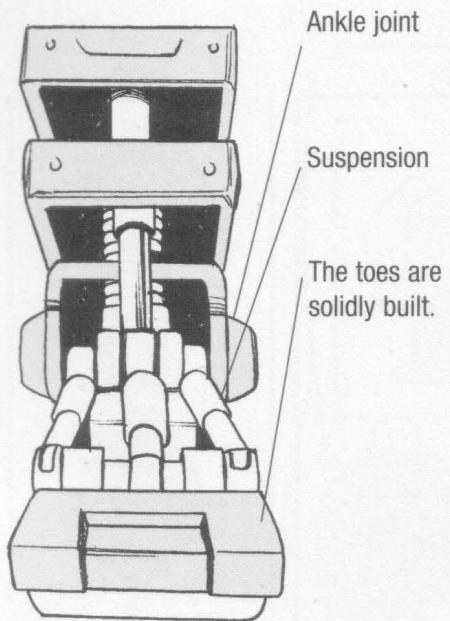
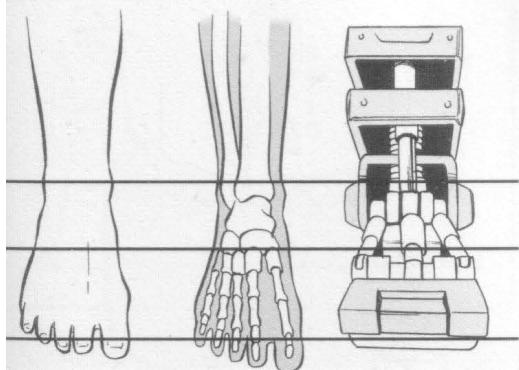
## Legs



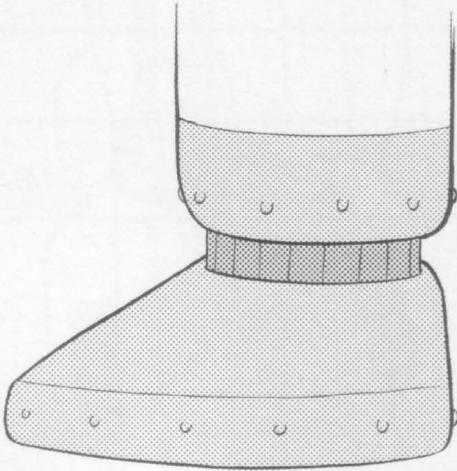
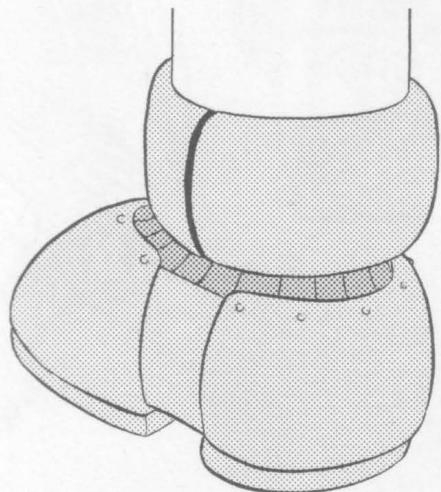
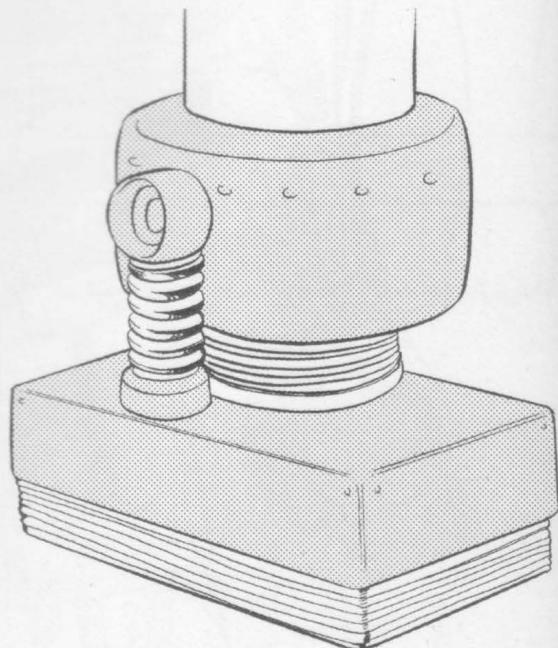
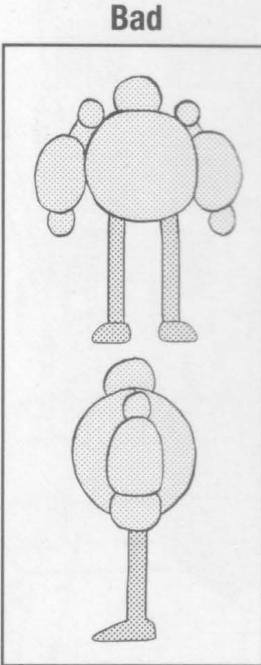
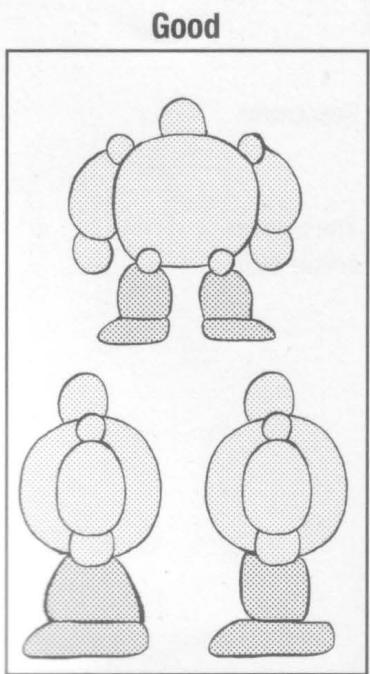
The legs are important because they support the entire weight of a robot. Make them big and strong.



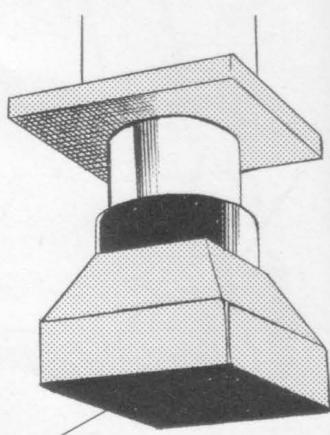
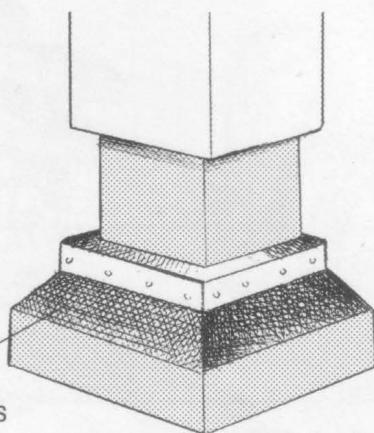
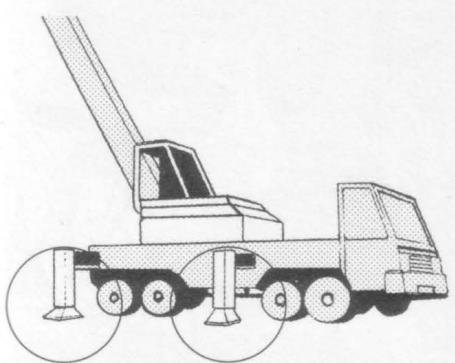
## Feet



**Short, Fat Legs** Stocky legs create a sense of stability.



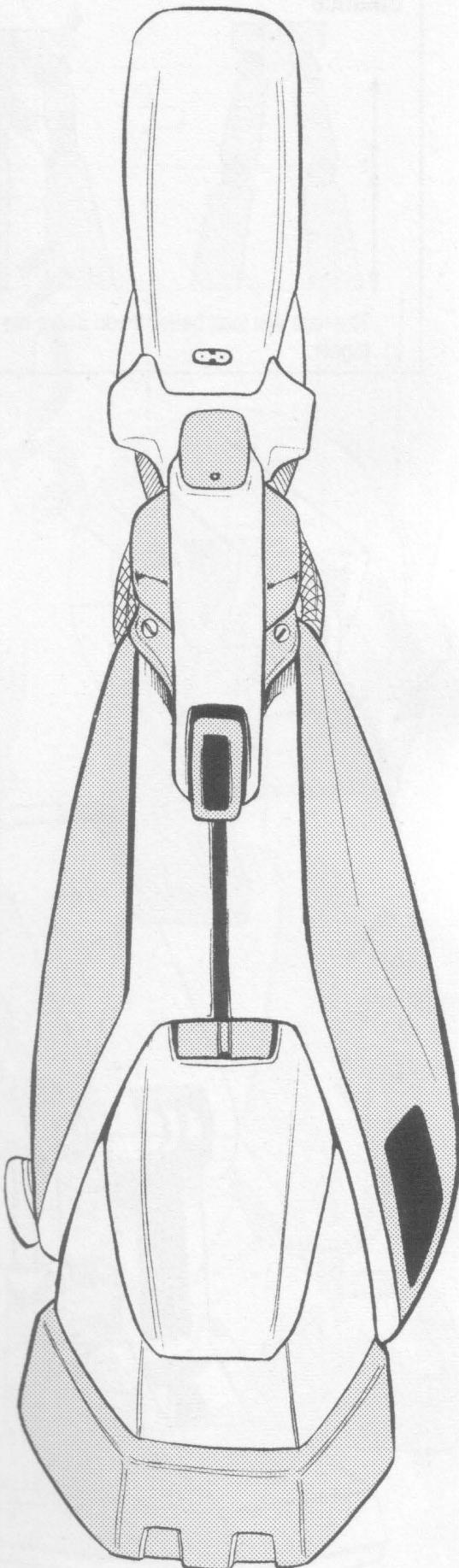
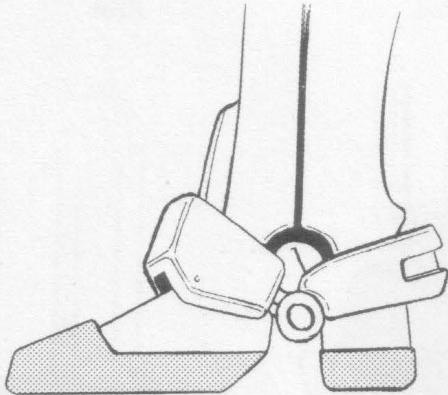
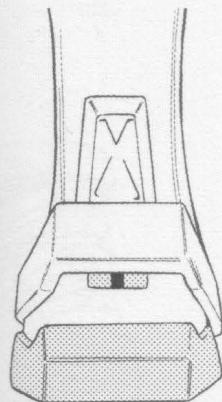
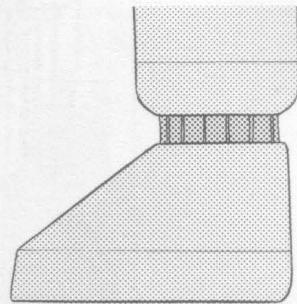
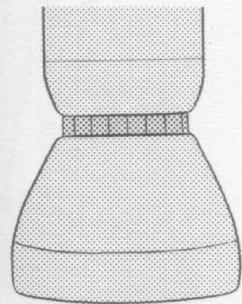
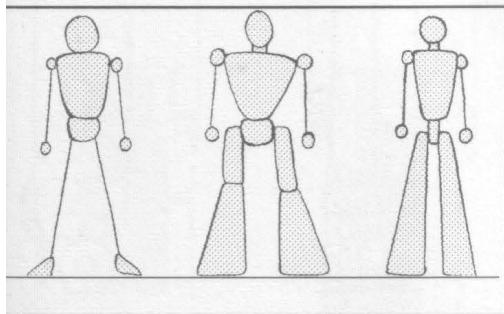
Optional crane-type support legs



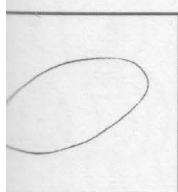
A combination of mesh and matting creates the dull shine of metal.

Drawing the bottom of support legs solid black makes them look heavy and hard.

Long, Slender Legs Draw the legs and feet large so that they are shaped like those in the illustrations below.

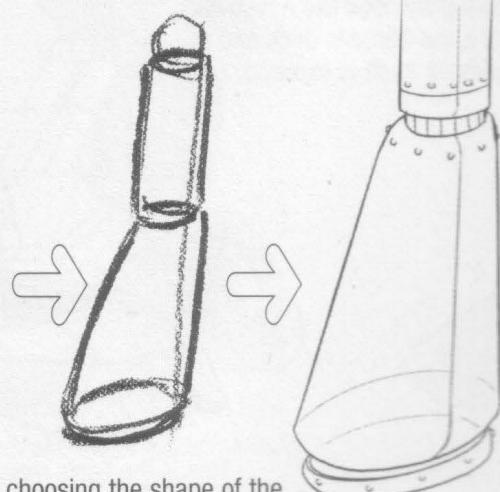


### Leg Form



foot (sole)

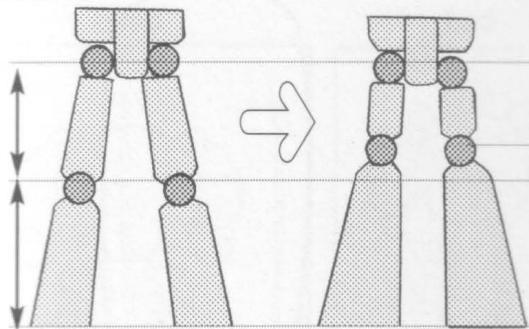
location of knee



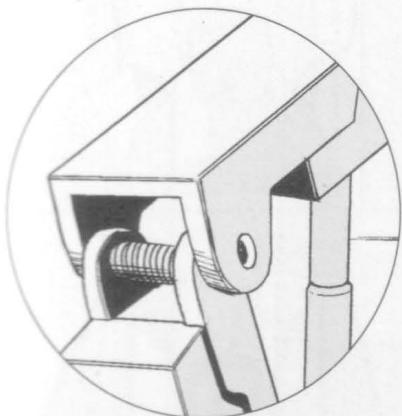
It is best to start by choosing the shape of the foot (sole) and drawing the entire leg by connecting the foot to the knee and hip joint.

## Leg Design

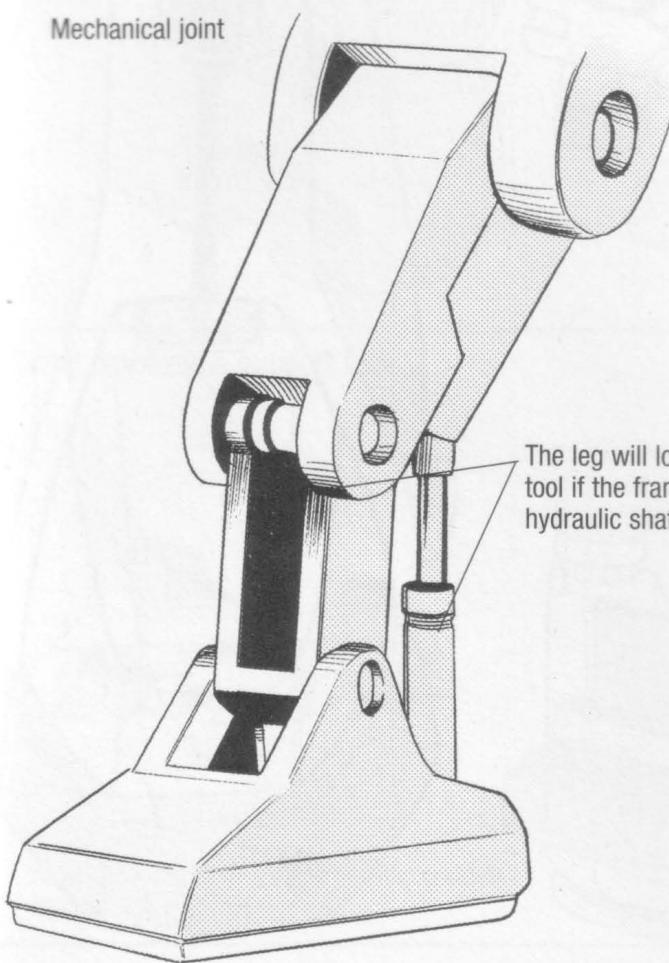
### Balance



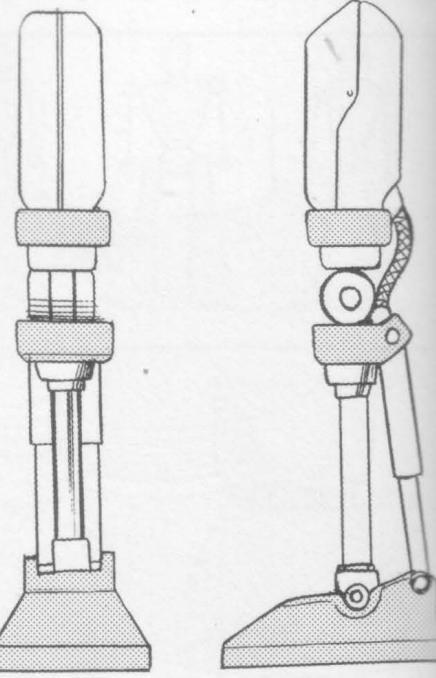
The legs will look better if you make the knees higher.



Mechanical joint

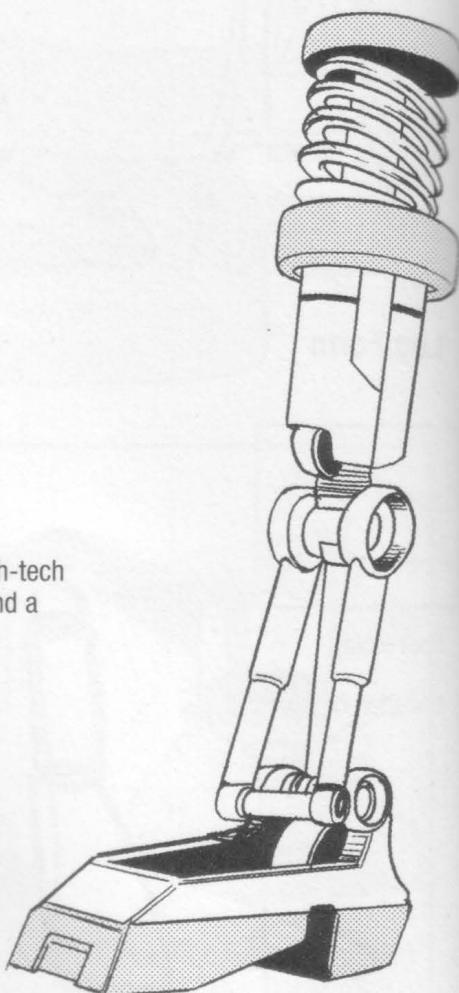


The leg will look like a high-tech tool if the frame is thick and a hydraulic shaft is exposed.

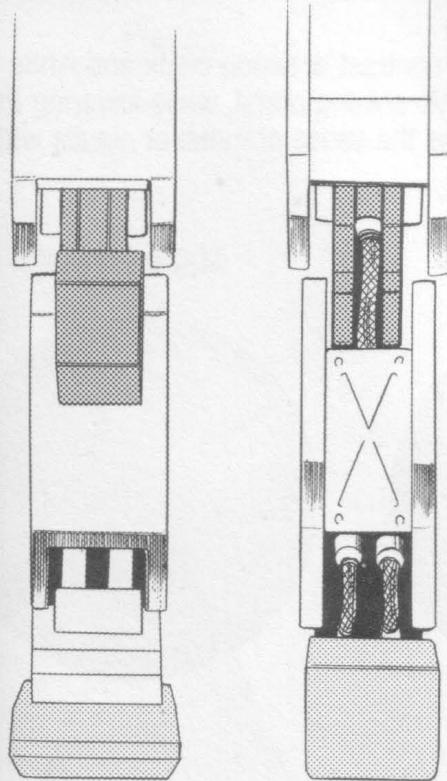


Front view

Side view

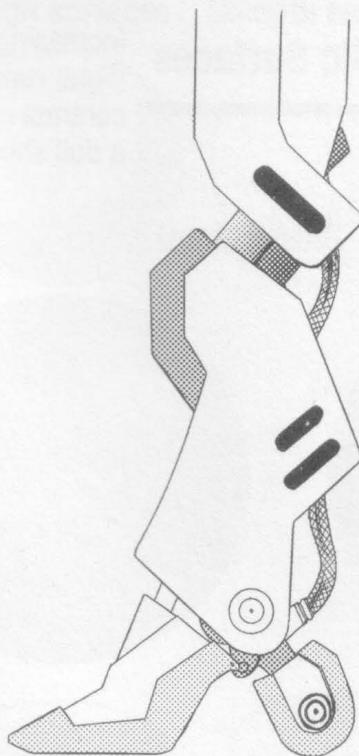


This is the basic leg structure. Choose the girth and the number and positions of shafts according to your tastes and how the robot will be used.

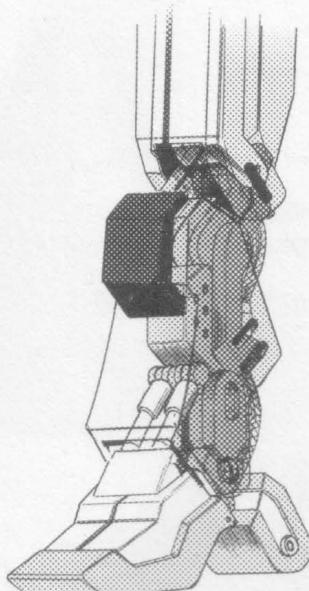
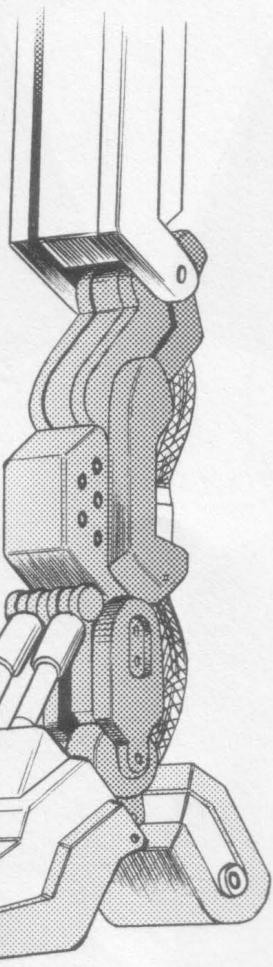
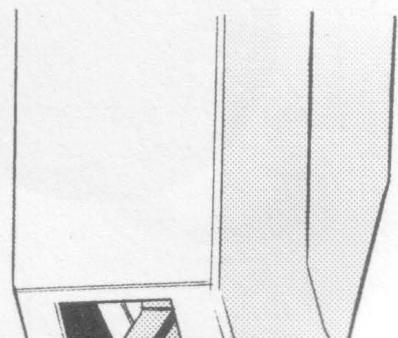


Front

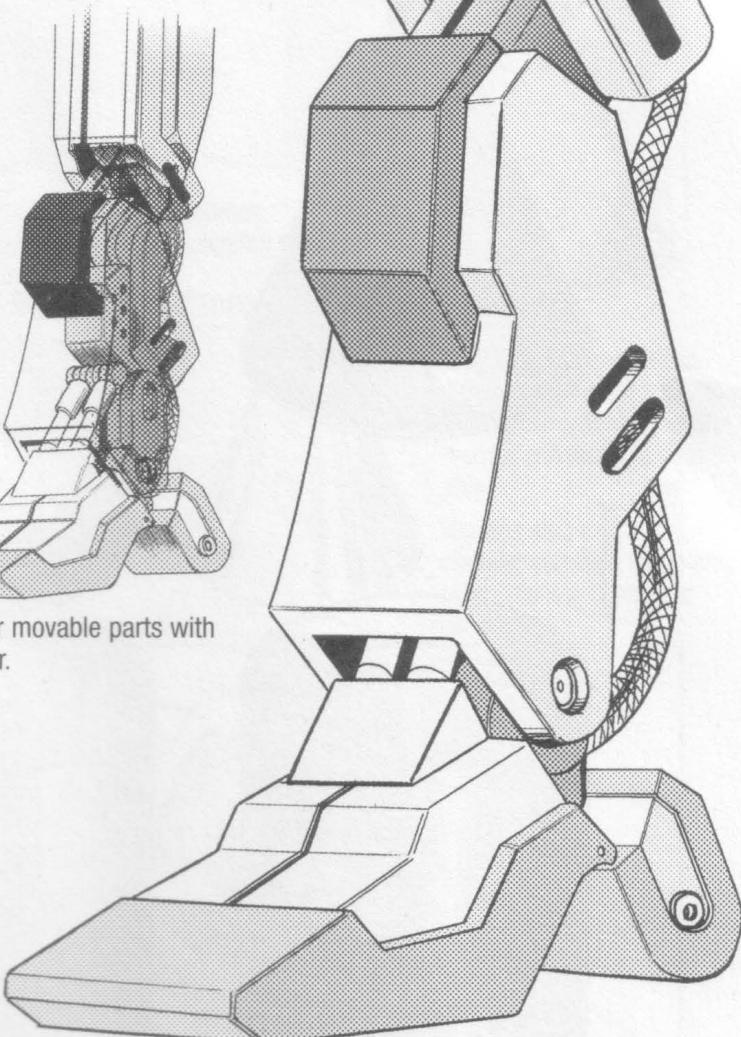
Back



Side



Cover movable parts with armor.



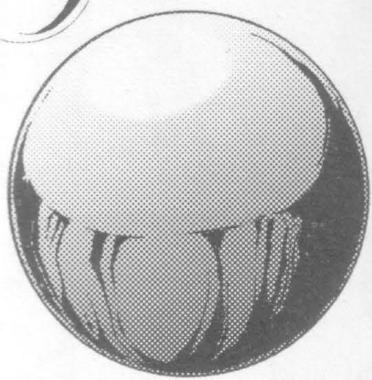
Internal structure: Make minor adjustments to the angle and position of shafts. Add supplemental parts to create the effect of a mechanical interior.

## Representation of Metallic Surfaces

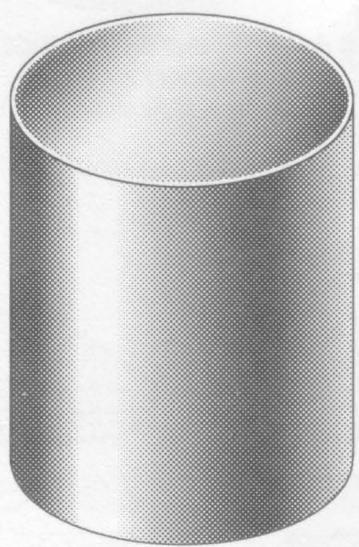
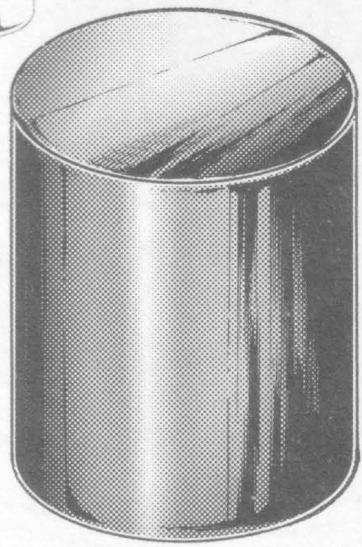
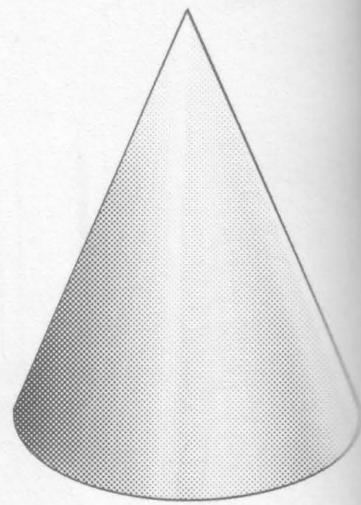
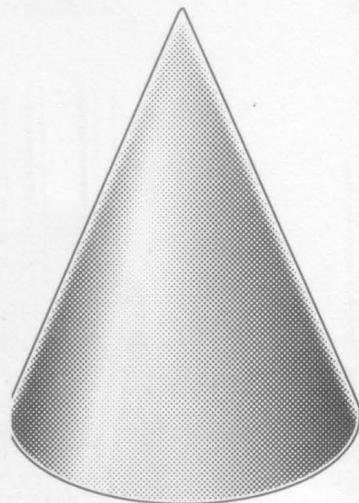
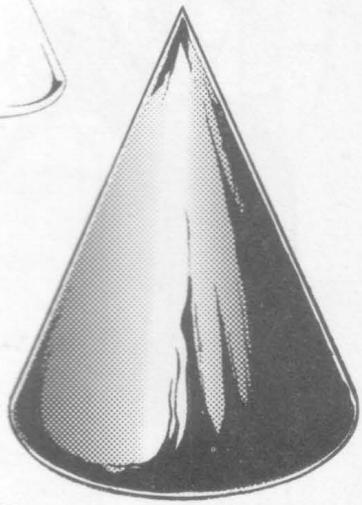
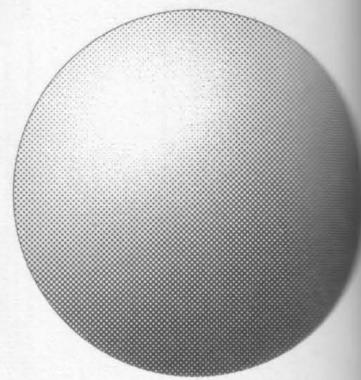
Increasing the contrast between black and white (light) represents shining metal, while lowering the contrast creates the sense of metal or plastic with a dull shine.



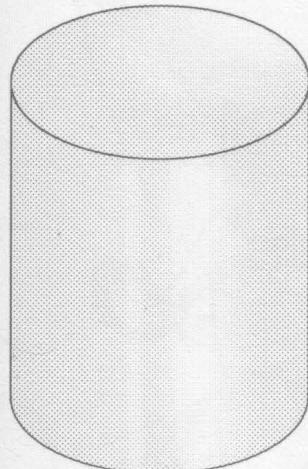
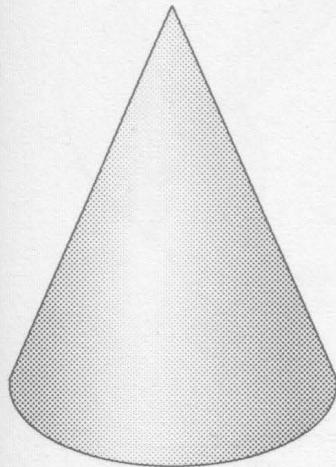
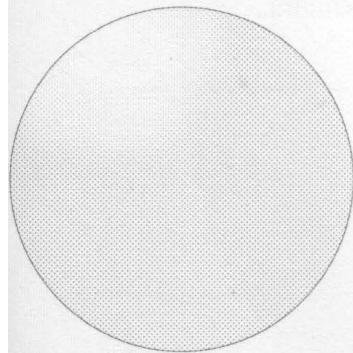
Glossy Metal



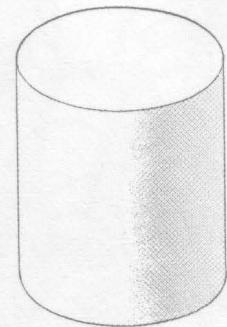
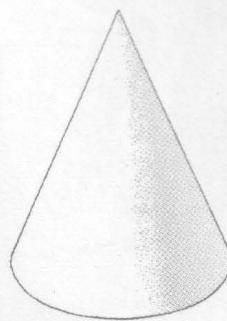
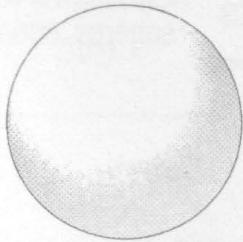
Matted Metal



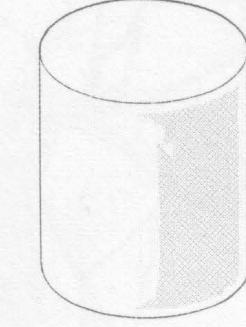
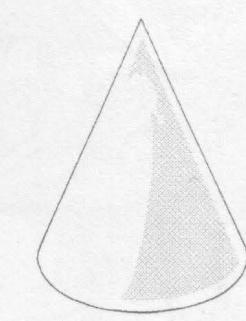
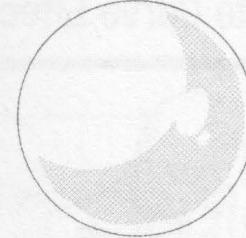
Plastic



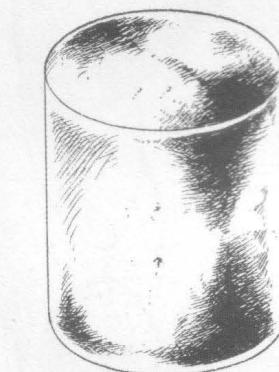
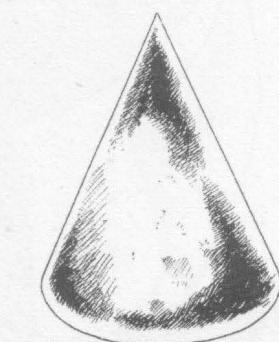
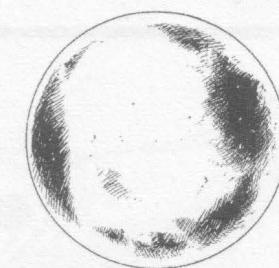
Rough surfaces



Smooth surfaces

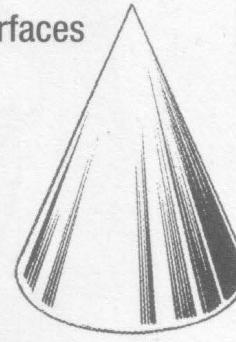
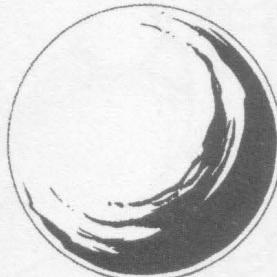


Rusted/Worn metal



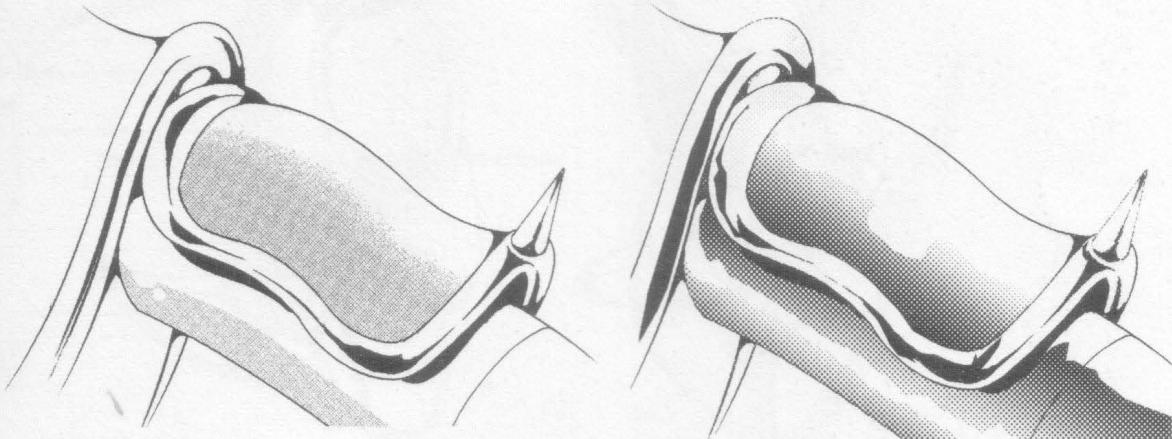
The feel of a solid is sometimes expressed by shaving or clipping tones.

### Metallic Surfaces



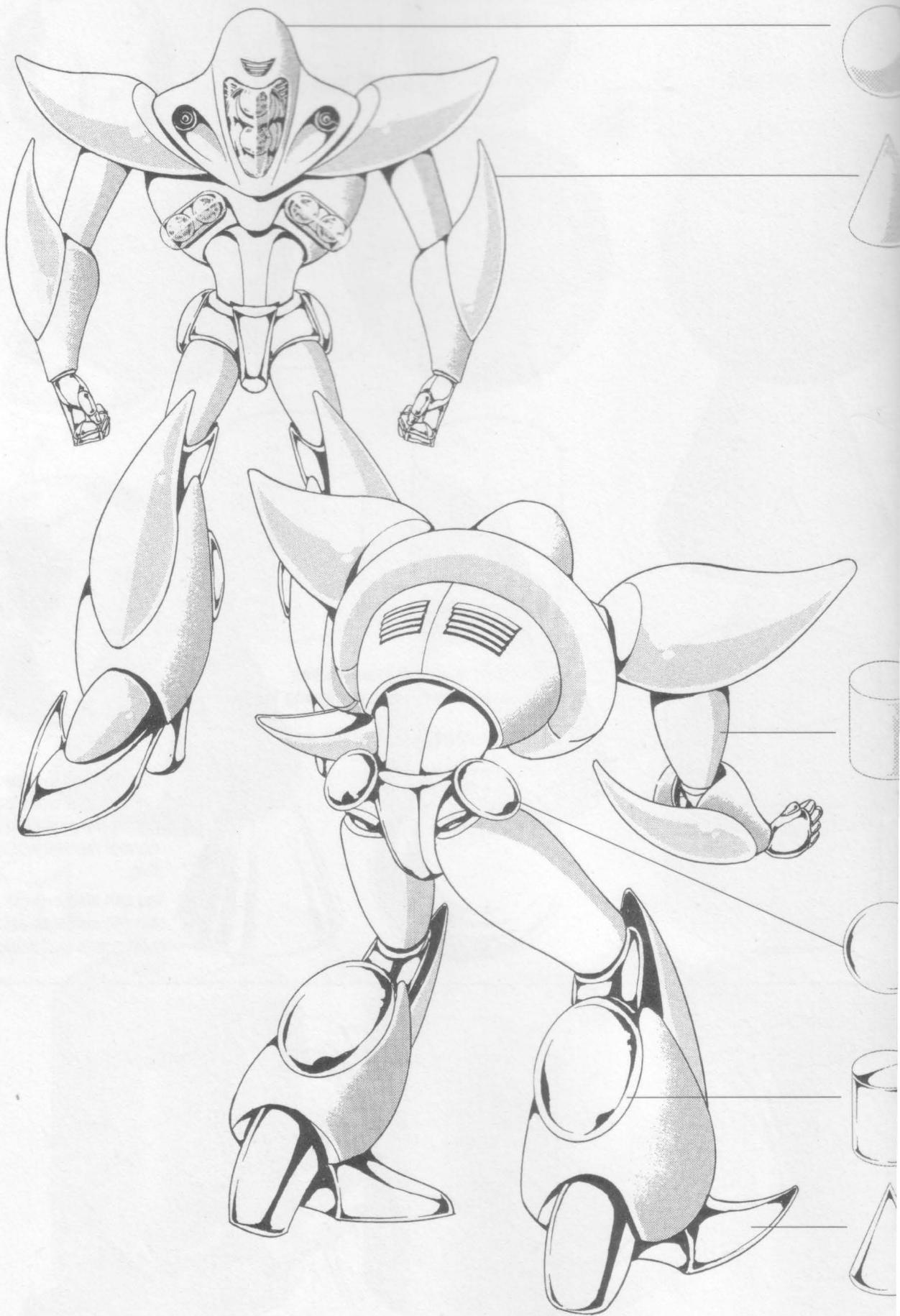
Use spotting to express grime and a worn look. You can apply gradation and/or normal mesh tones over this.

You can also express metallic surfaces using only solid colors and straight lines.



## Using Tones to Create Curve Effects

Express curve lines by using a combination of spheres, cones and cylinders.



Step 1



Basic tones are applied to define the curves.

Step 2



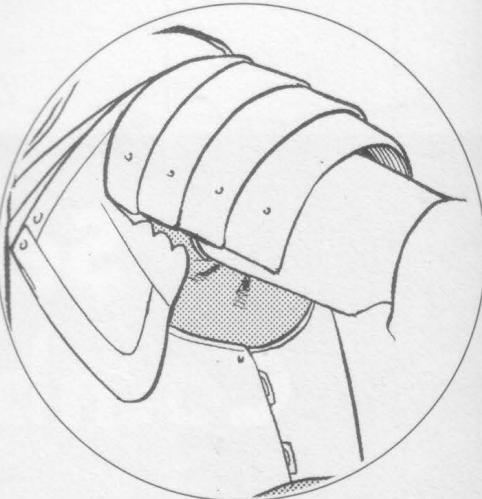
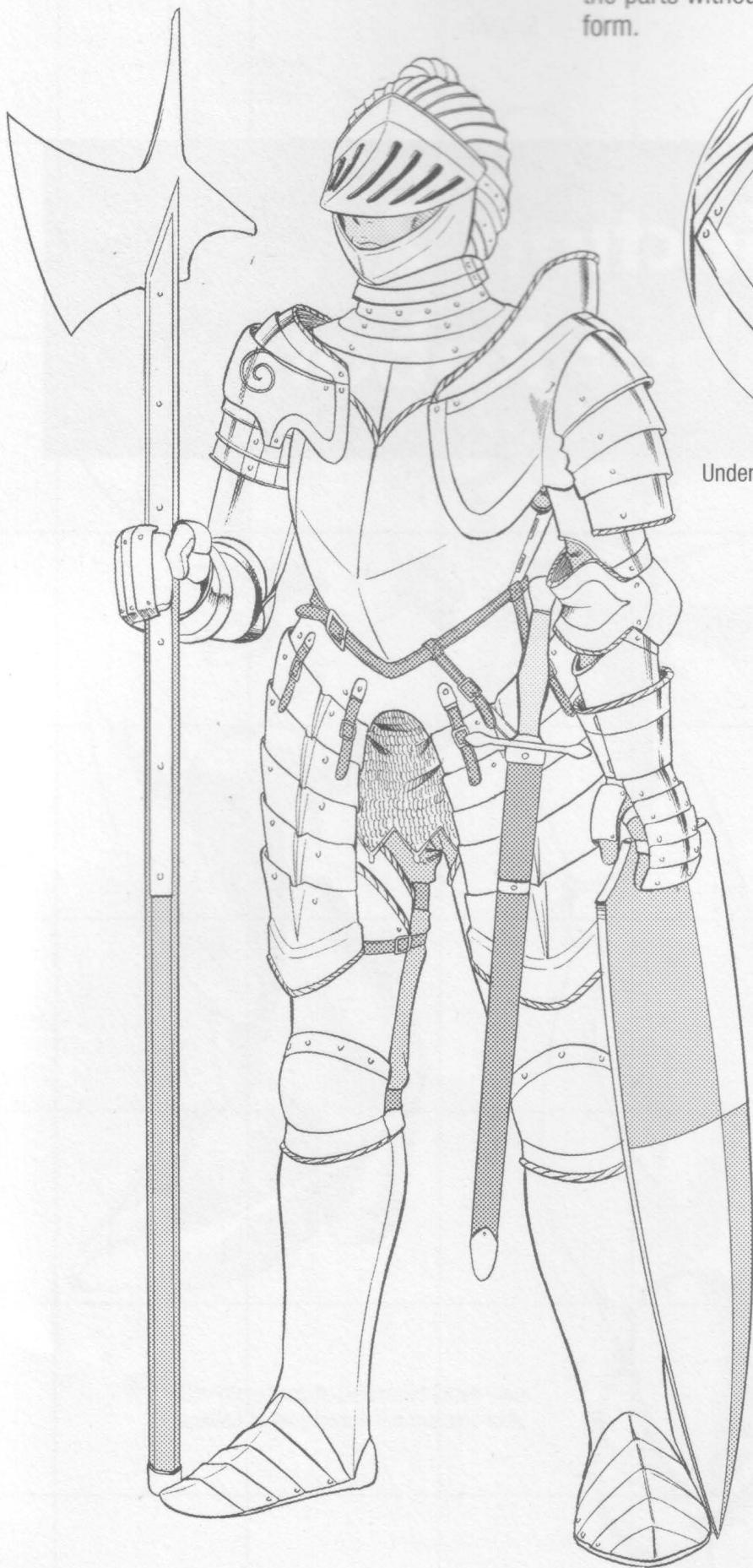
Completed robot. Deformed tones were applied to emphasize the metallic look.

# **Section 2**

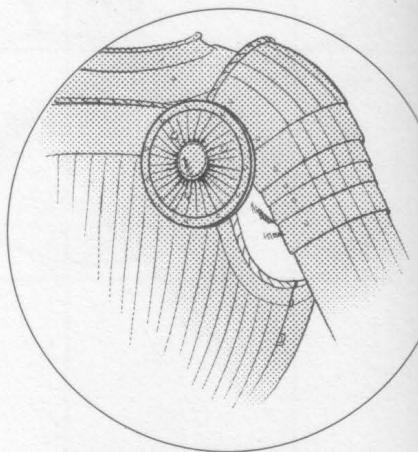
# **Combat Robots**

## Design Based on Medieval Armor

A classic suit of armor can be rendered into a modern-day mecha by simplifying and deforming the parts without significantly altering the overall form.



Underarm and seam of sleeveless undergarment



Different version of shoulder pad and sleeveless undergarment



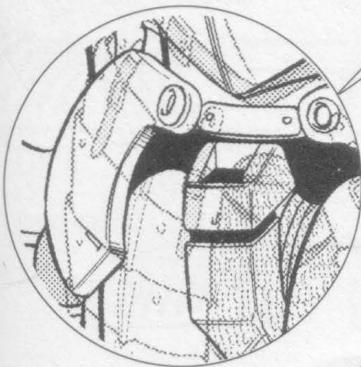
Thigh protectors and knee pads

Use the helmet lines to form the head.

Emphasize sturdiness by extending and thickening the shoulders.



Make joints movable.



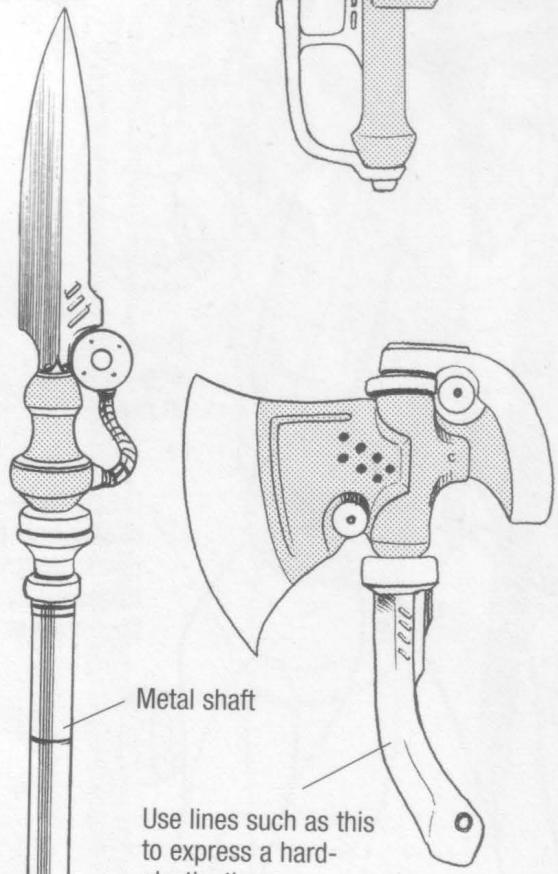
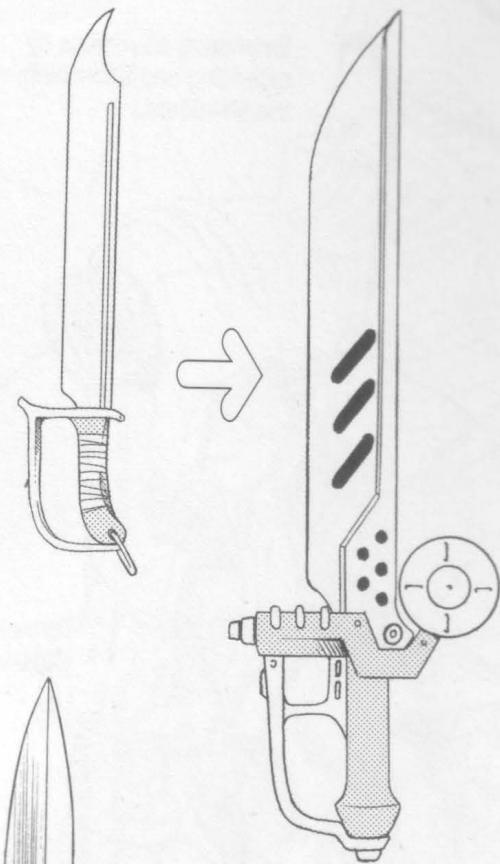
Combine belts into a single belt.

Leave the original lines in place.

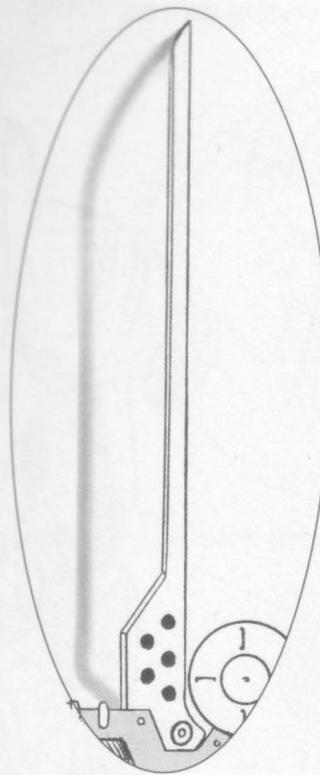
Create three-dimensional effects (thickness and hardness) by adding lines such as these.

Feet should be big and stable to make up for simplicity of foot lines.

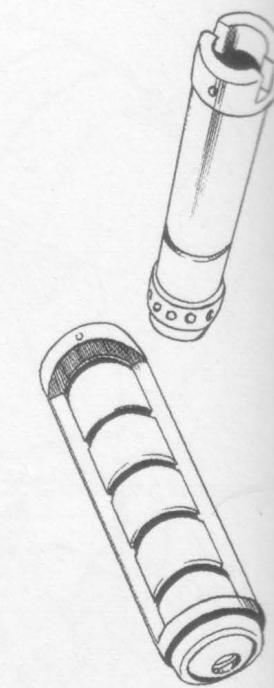
## Arrangement of Swords, Axes and Spears for Use with Robots



Classic weapons should retain their original overall form but feature minor modifications to make them look futuristic.

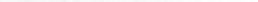
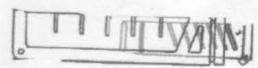
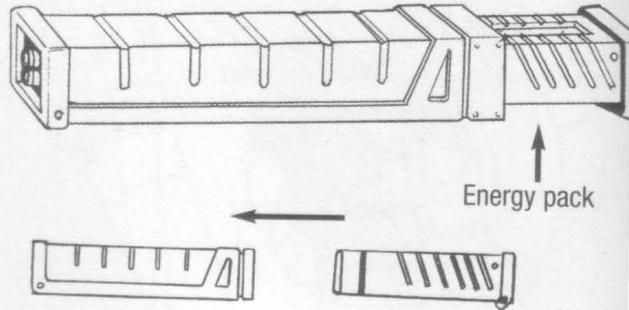


Applying tones to a blade and planing will make it look like a laser blade.

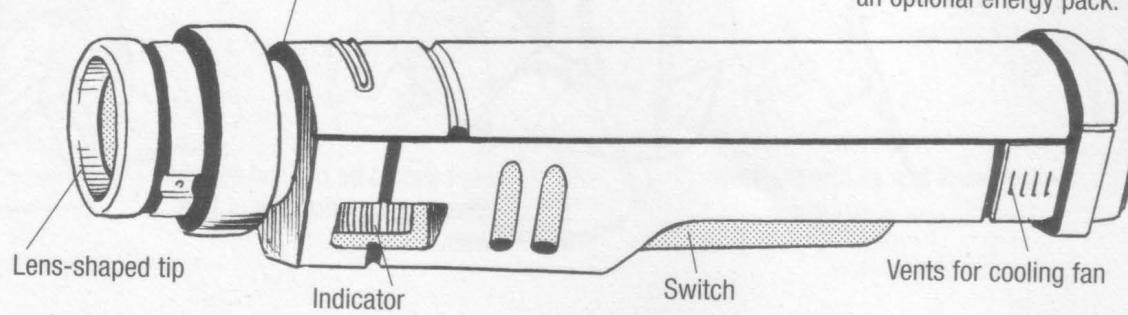


Making the handle look like a metal shaft will give it a mechanical feel.

### Beam saber

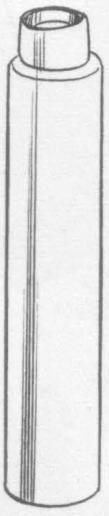


You can give beam sabers an optional energy pack.

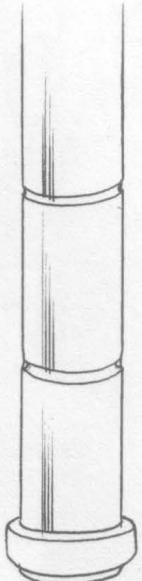


## Small tools used to make a robot look more mechanical

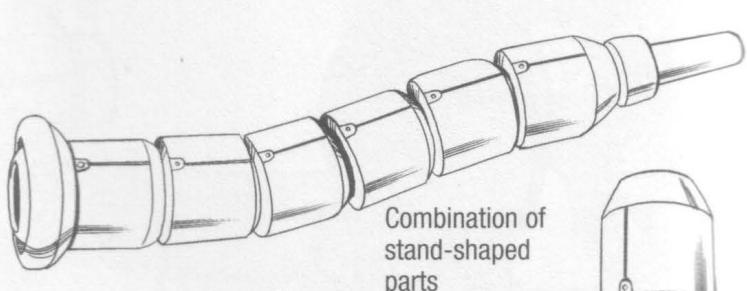
### Shafts



Plain type



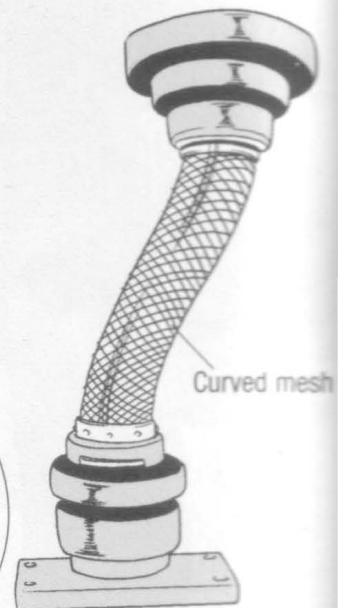
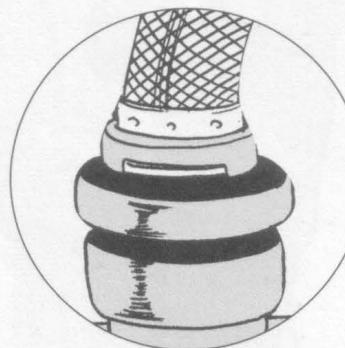
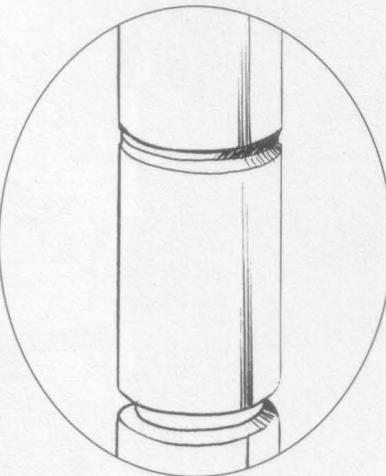
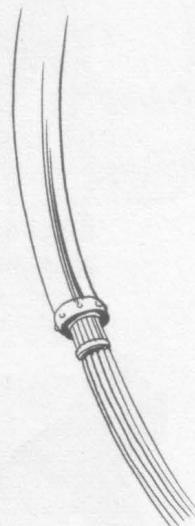
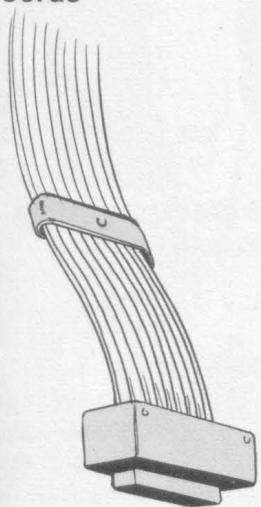
Type with  
seams/grooves



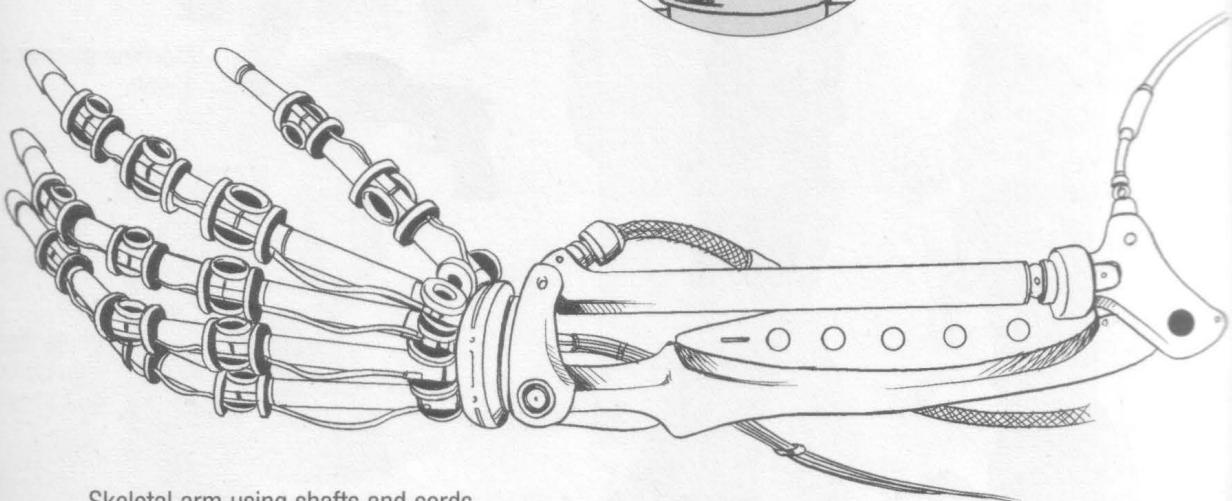
Combination of  
stand-shaped  
parts



### Cords



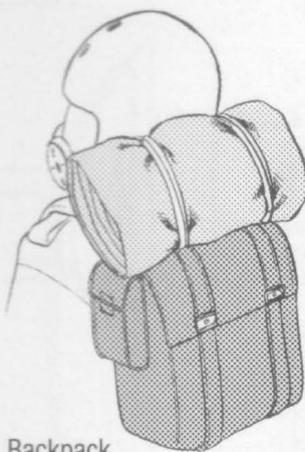
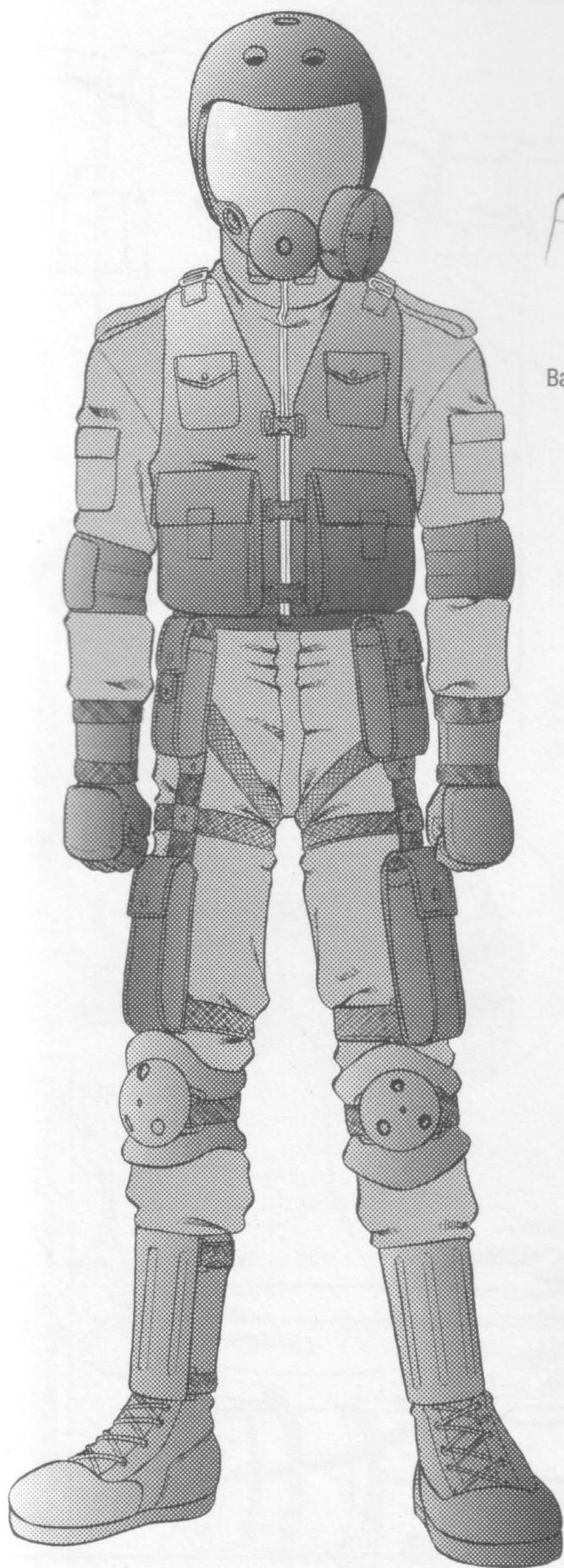
Curved mesh



Skeletal arm using shafts and cords

## Robots Based on Combat Uniforms

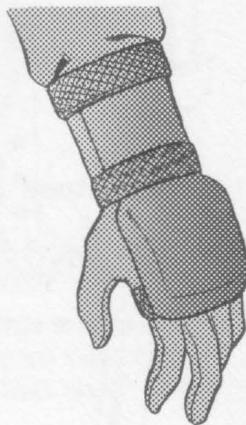
Special-forces style. Refer to space suits and diving suits.



Backpack



Parachute



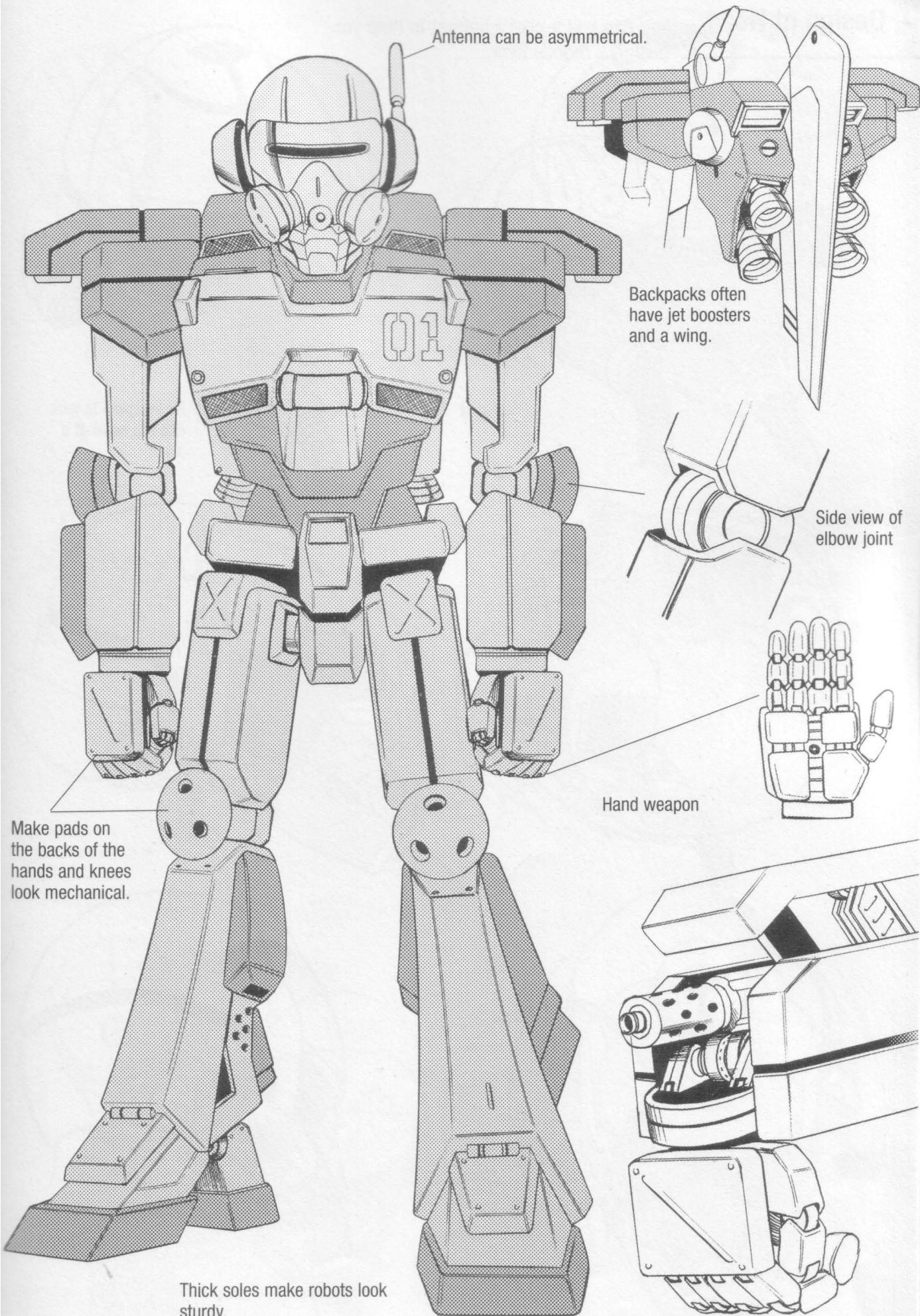
Gloves are thick and sturdy and have protective cushions on the back.



Machine guns and pistols

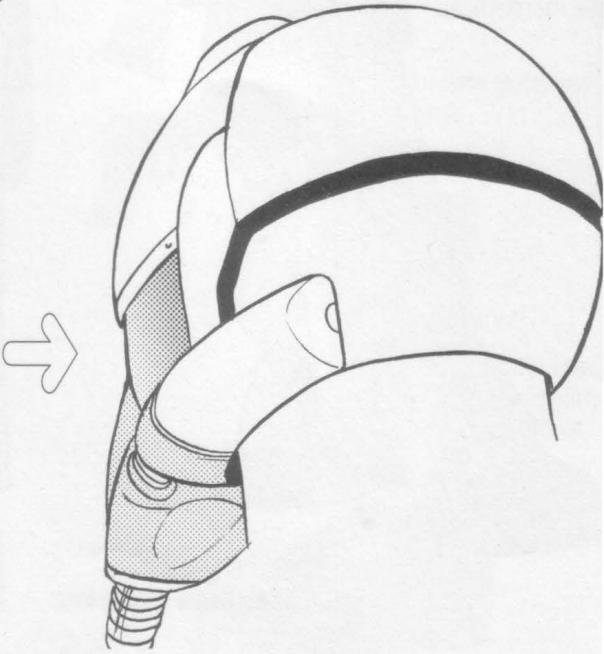
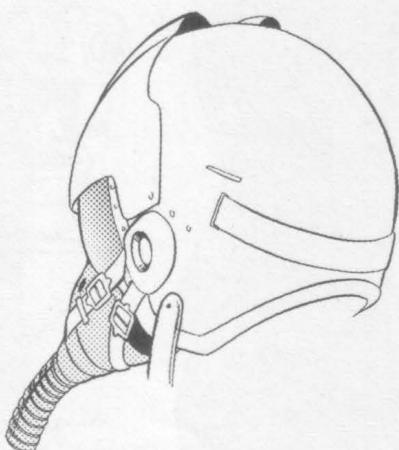
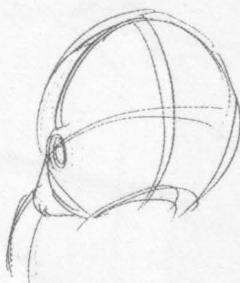
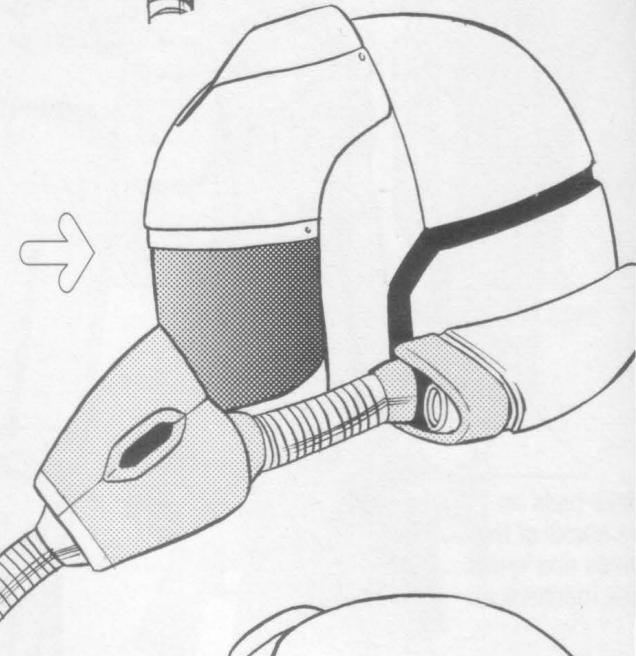
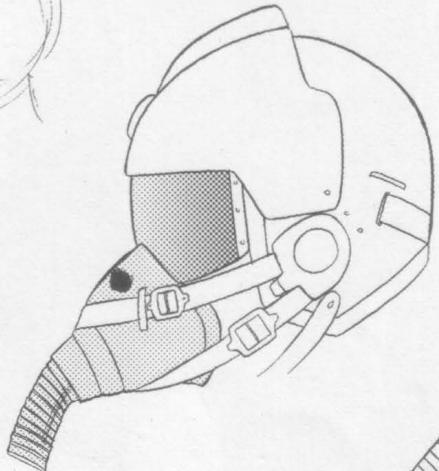
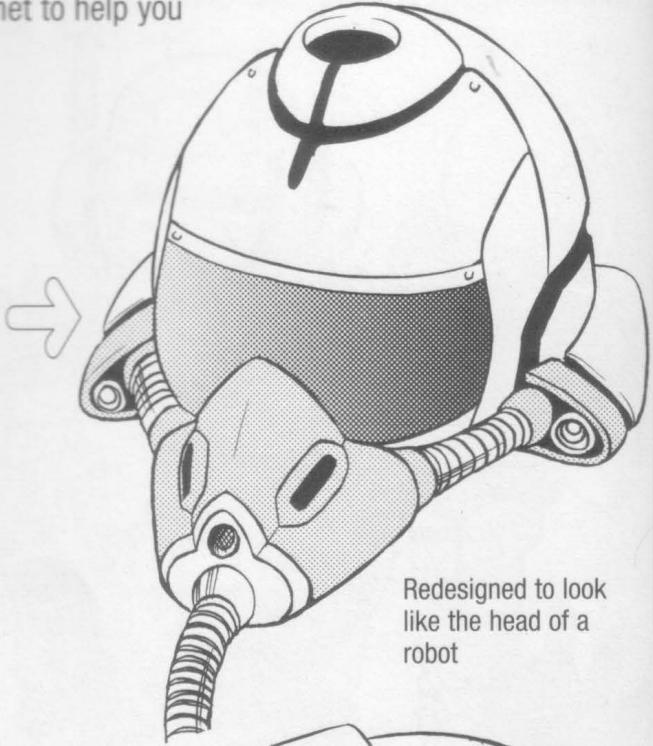
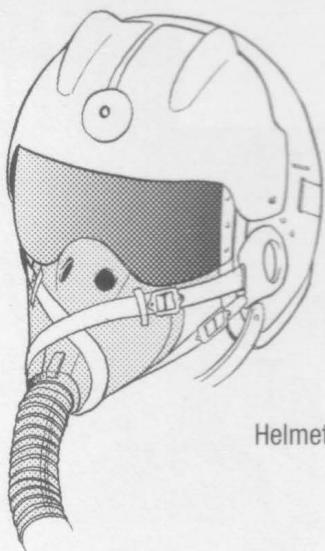
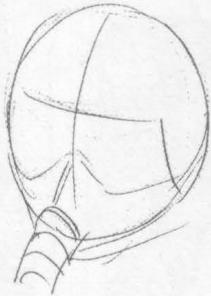


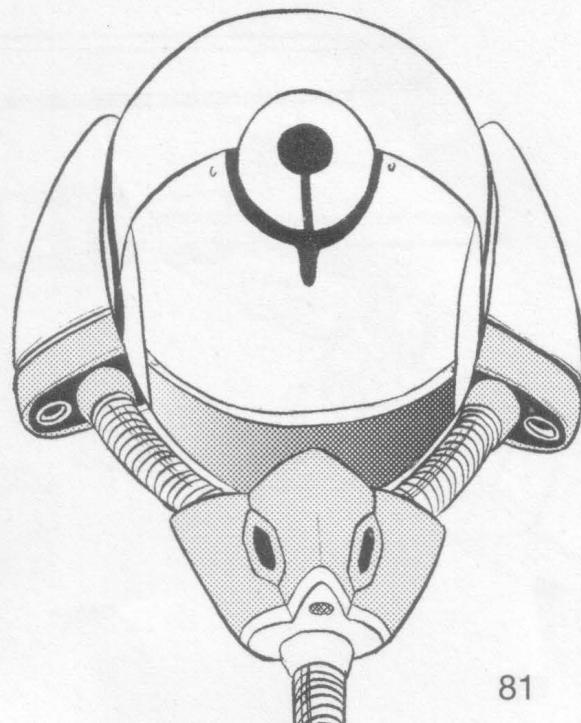
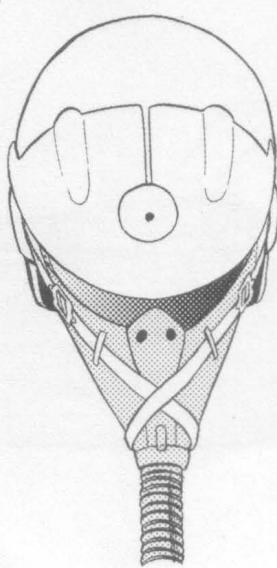
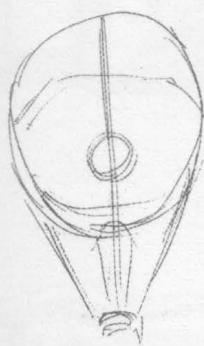
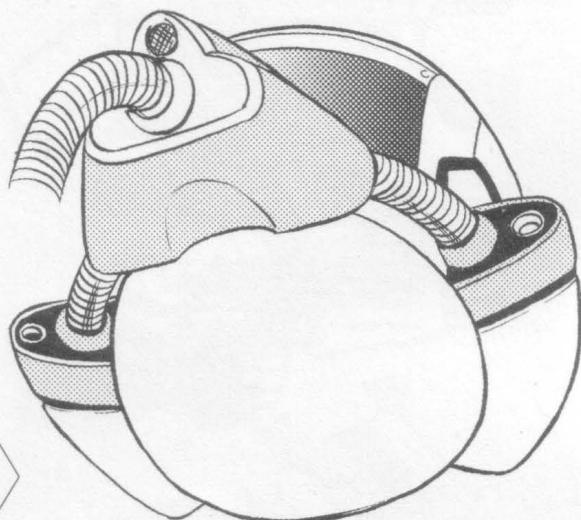
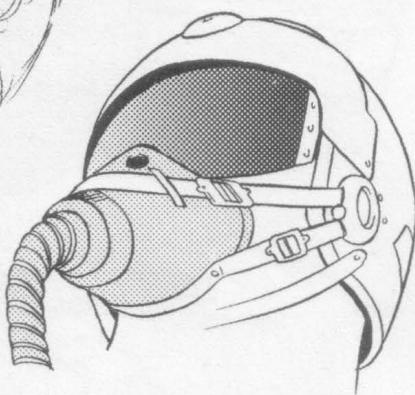
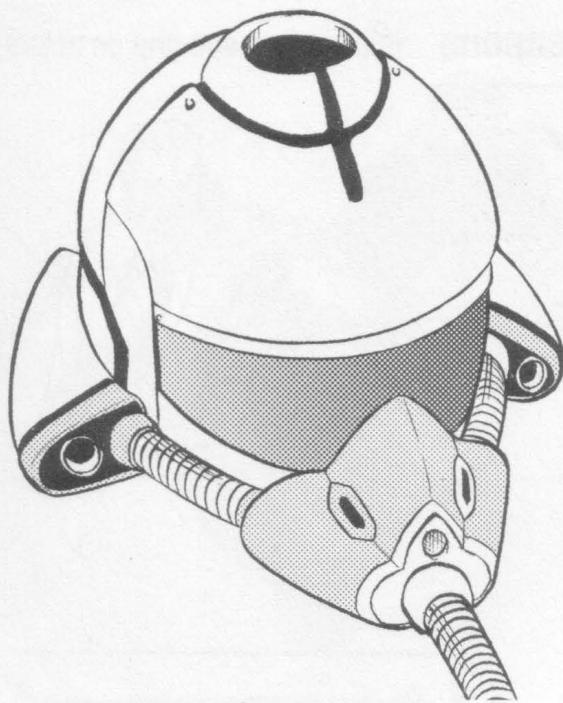
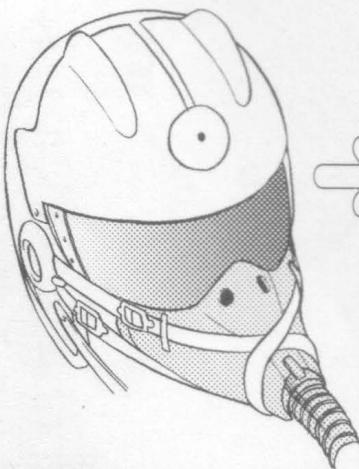
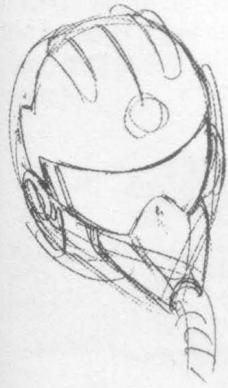
Boots feature shin guards and thick soles.



## Design of Head

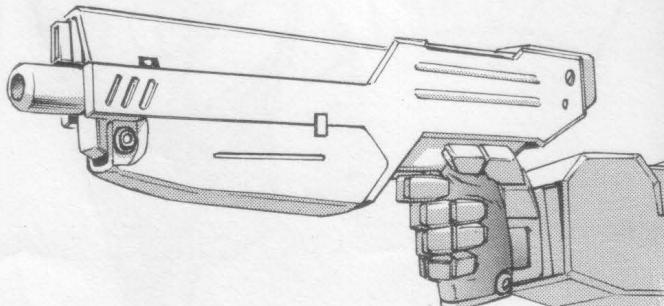
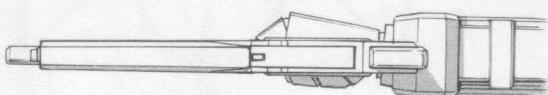
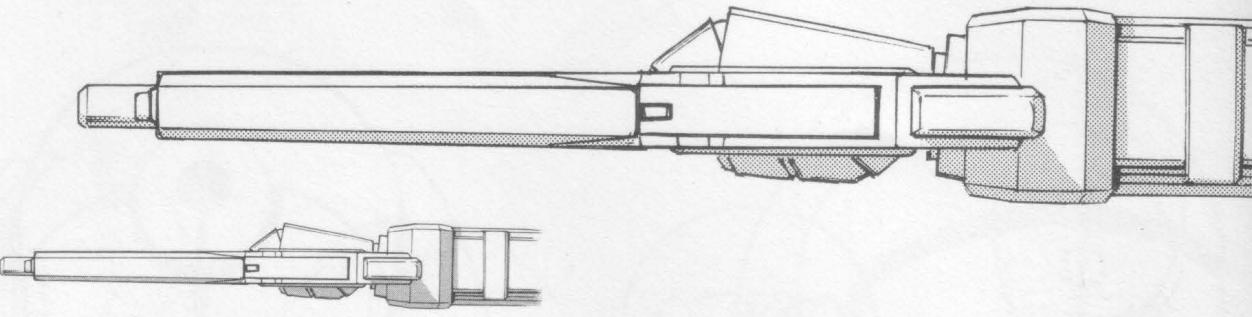
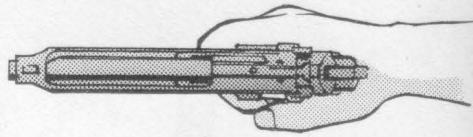
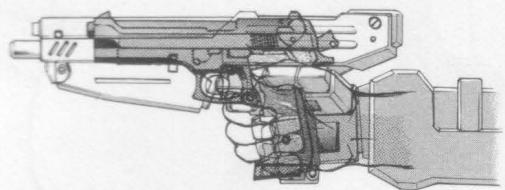
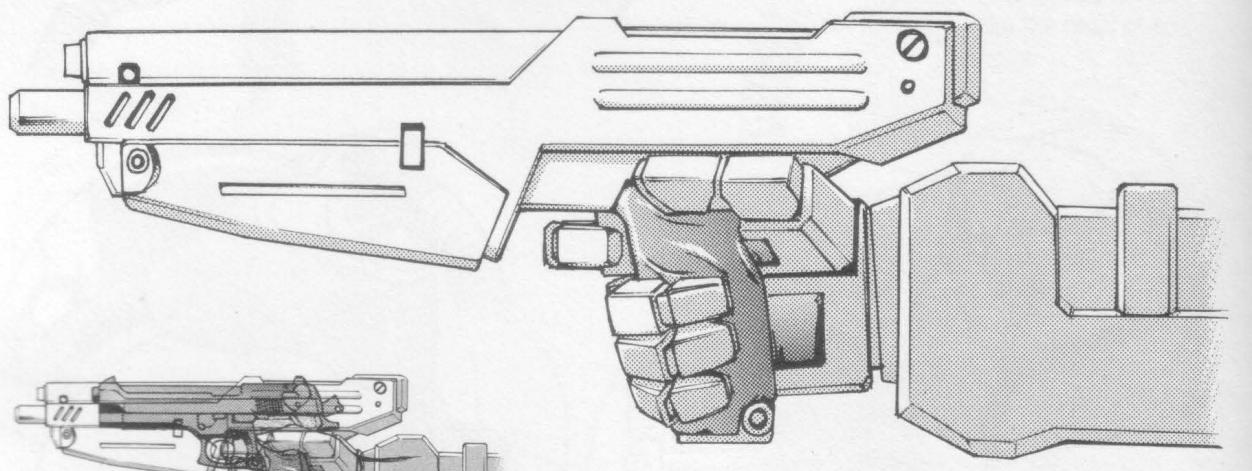
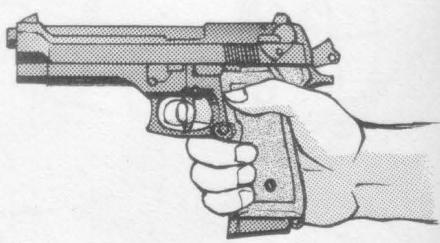
You can use a pilot's helmet to help you design a robot's face.



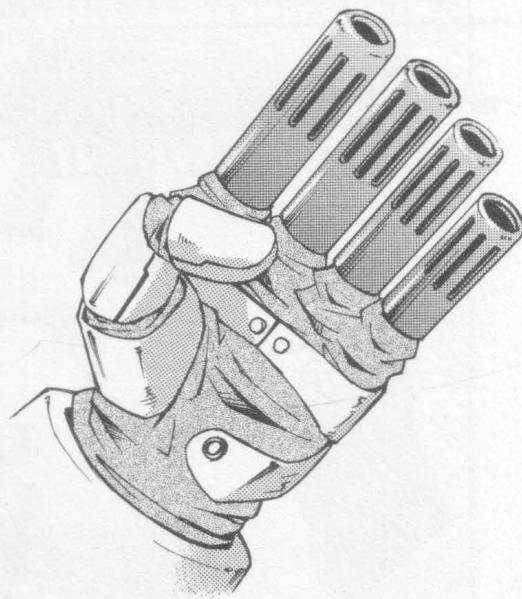
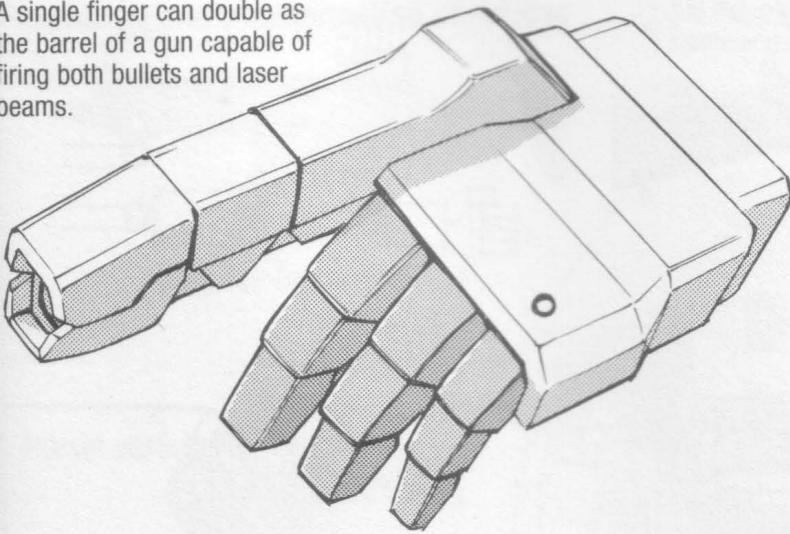


## Weapons

Base stance and grip on actual pose.

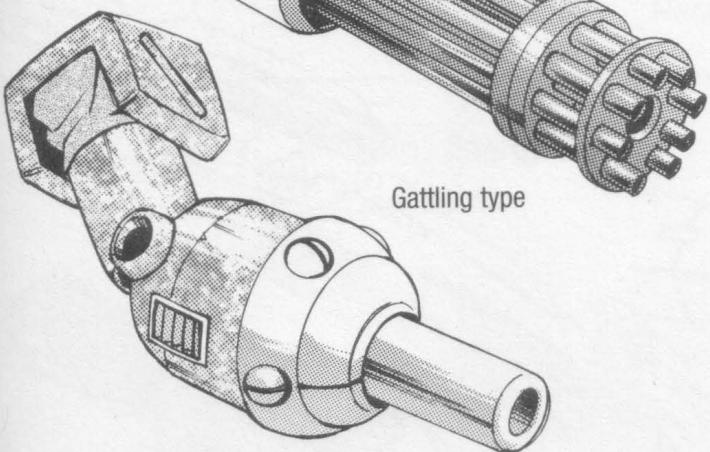
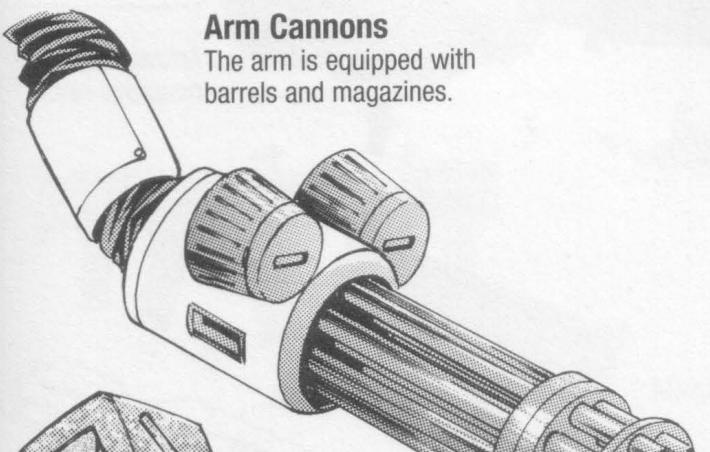


A single finger can double as the barrel of a gun capable of firing both bullets and laser beams.



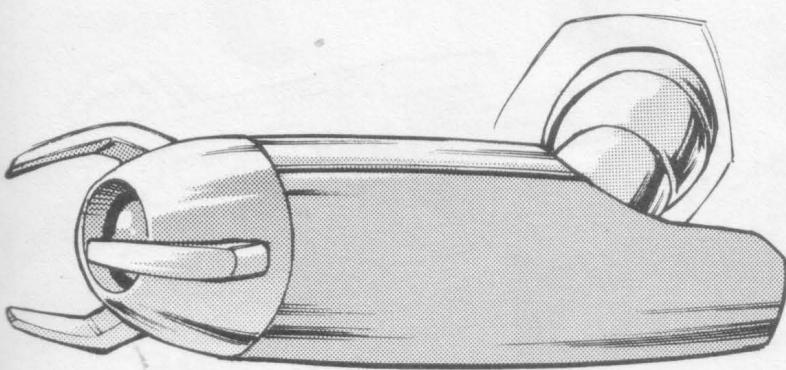
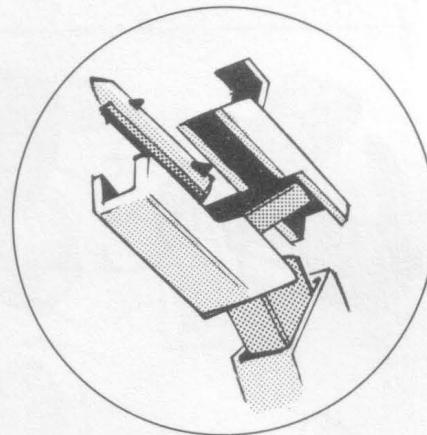
### Arm Cannons

The arm is equipped with barrels and magazines.

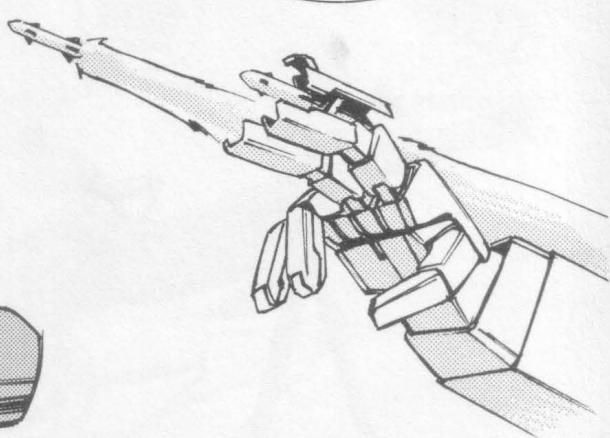


Gattling type

### Hand Missiles/Handguns

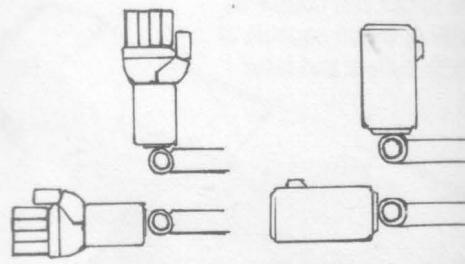


Laser type

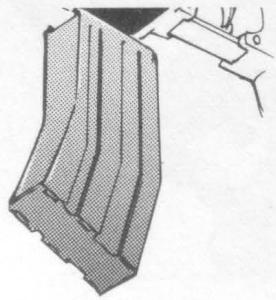


## Magazine Arrangements

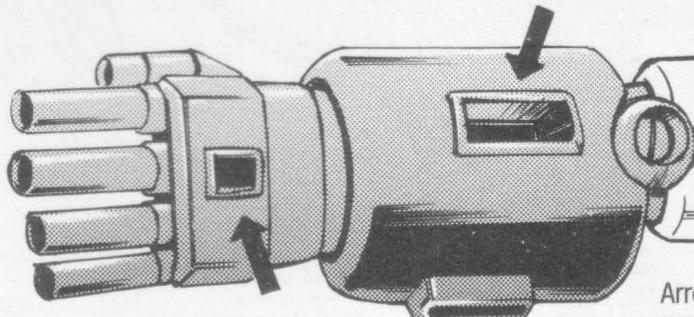
Apply magazines and loading systems to robot arm weapons.



Hand- or arm-type guns

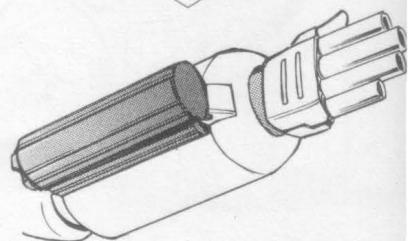
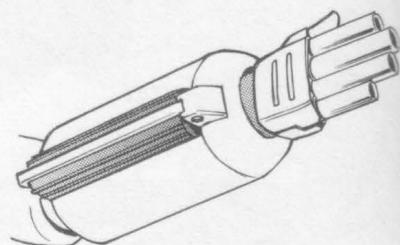
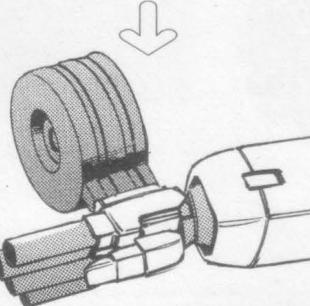
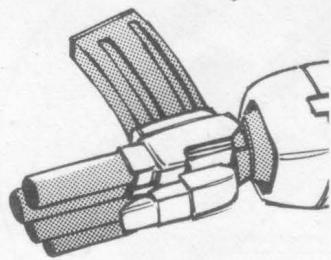
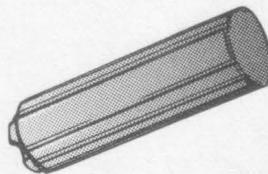
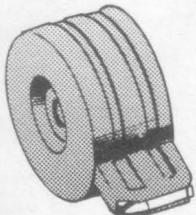
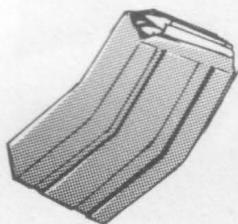


Exchange/removal of magazine

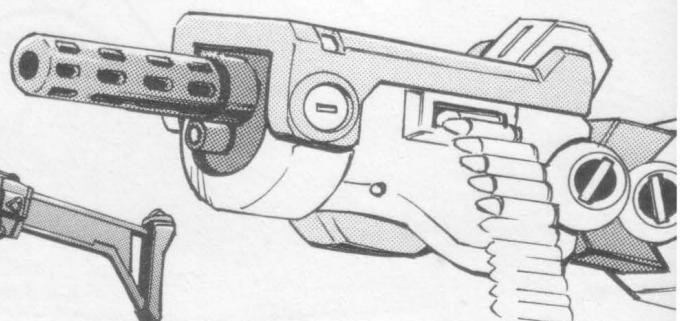
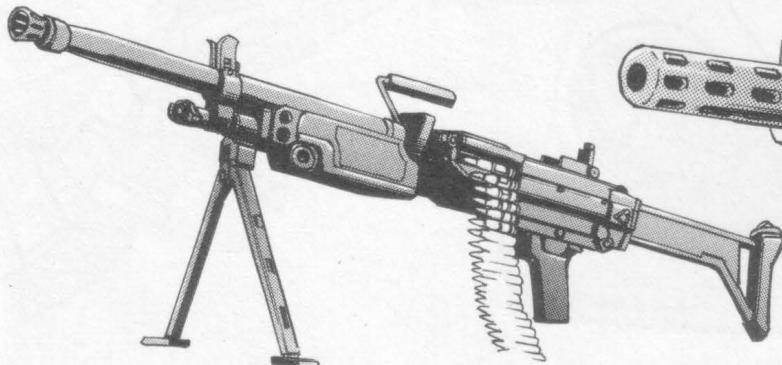


Arrows indicate magazine slots

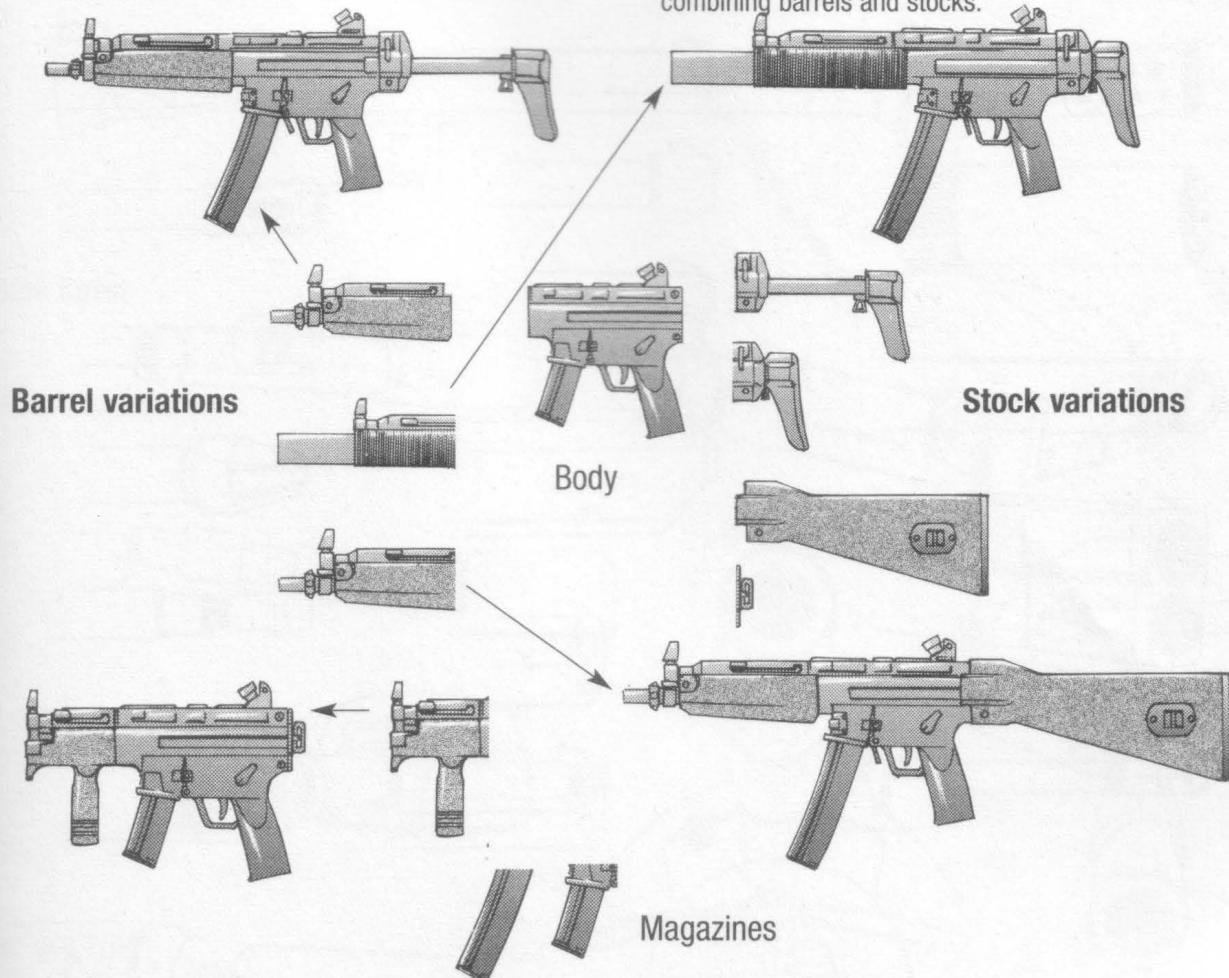
Magazine variations



Machine guns

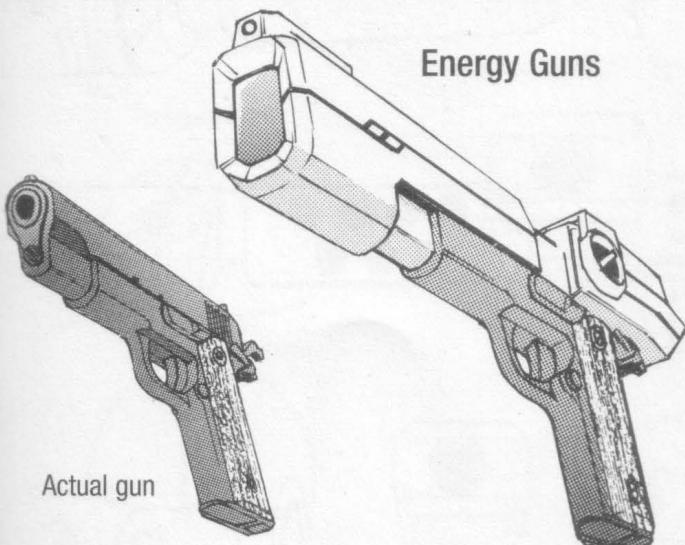


### Exchange and transformation of options

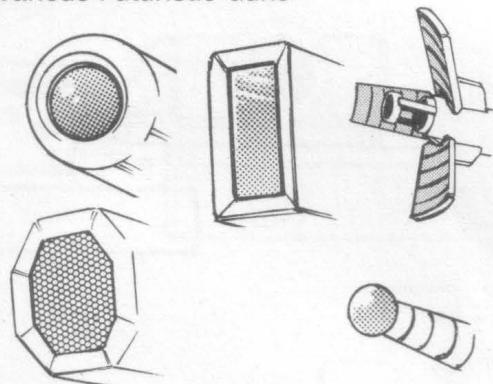


You can get a variety of shapes by exchanging and combining barrels and stocks.

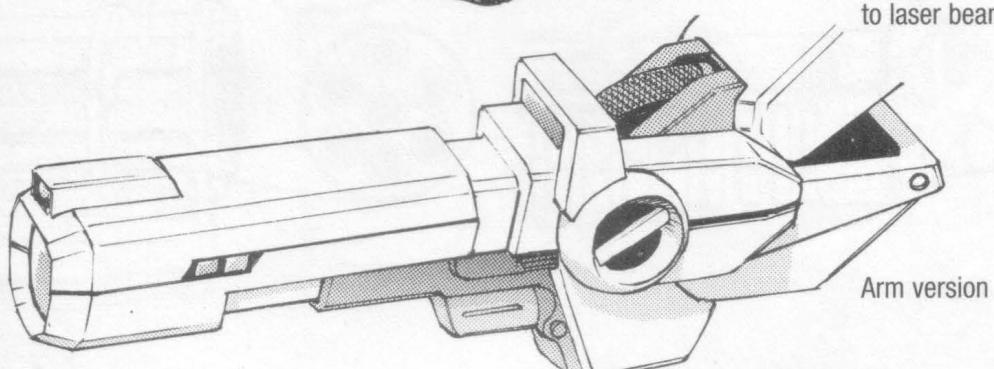
### Energy Guns



### Various Futuristic Guns



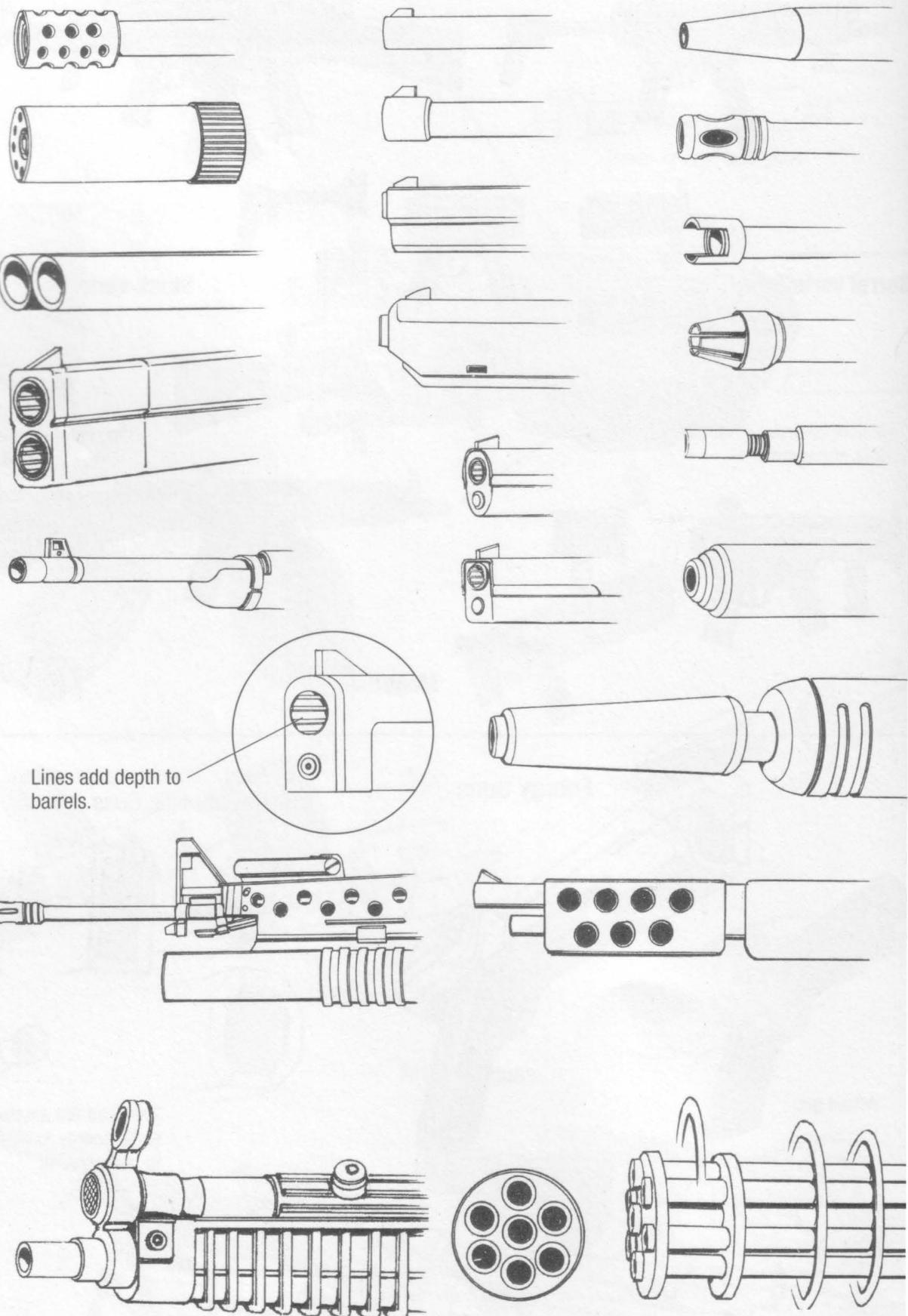
They can fire anything from sonic energy to heat waves to laser beams.



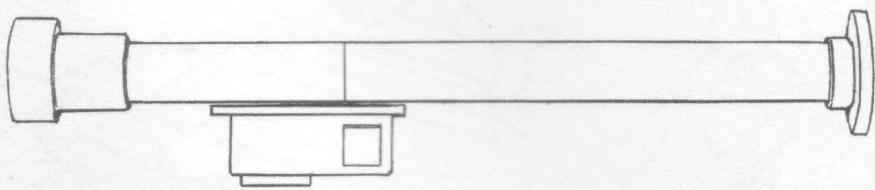
Arm version

## Barrels and Muzzles

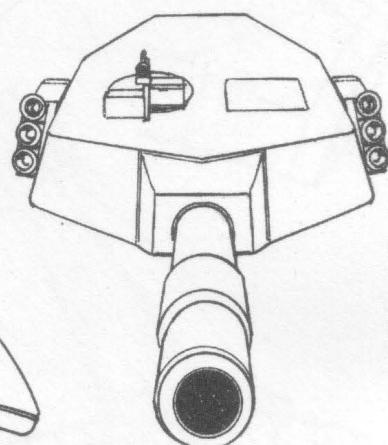
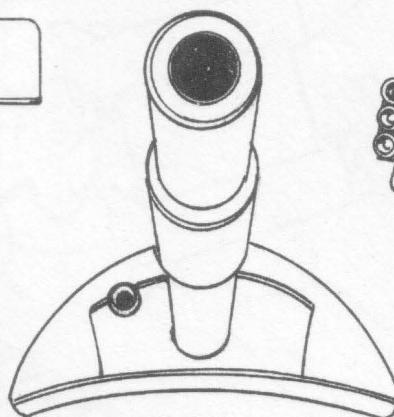
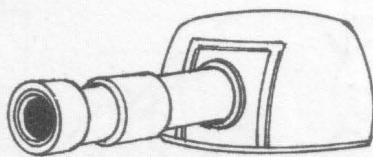
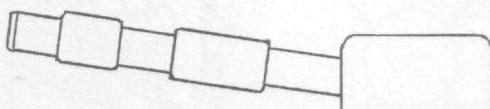
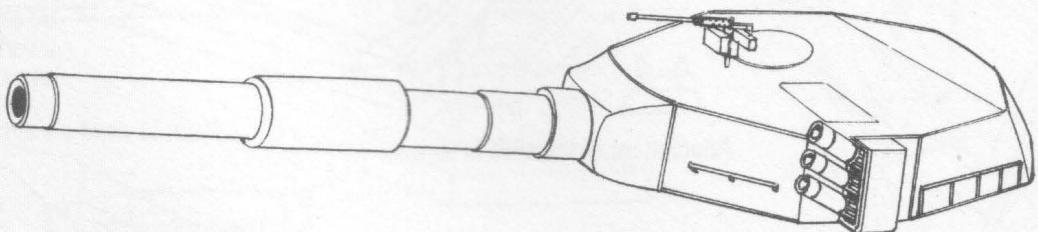
Use a variety of gun types, including sidearms, rifles and automatics.



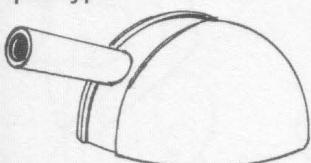
azooka



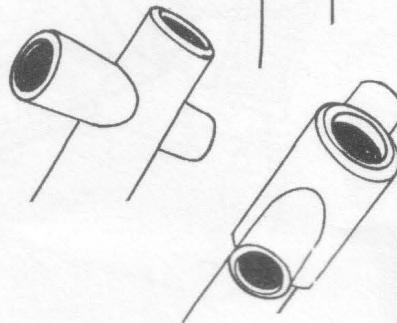
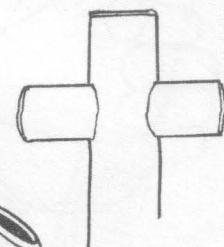
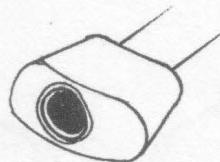
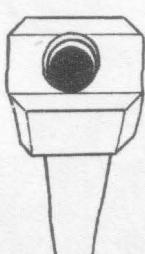
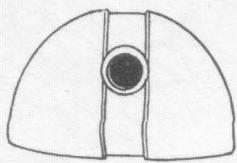
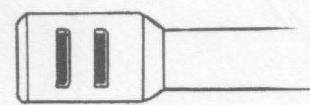
anti tank turret



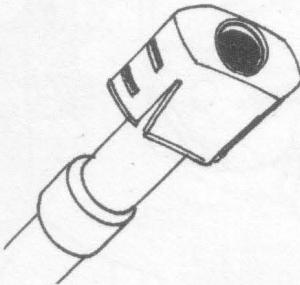
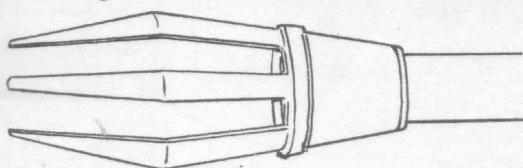
Simple type



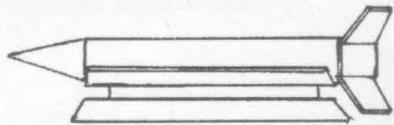
Muzzle



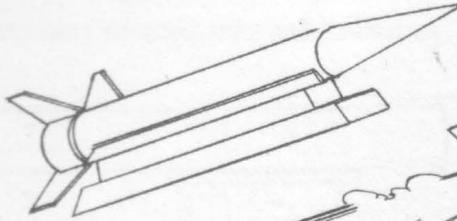
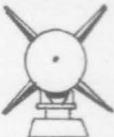
Tip of self-propelled  
anti-aircraft gun



## Missiles



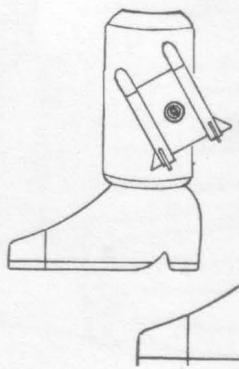
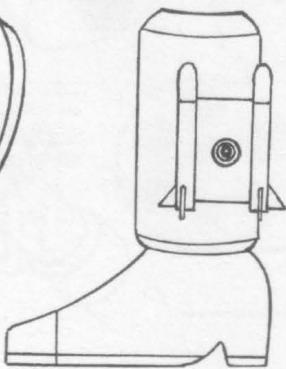
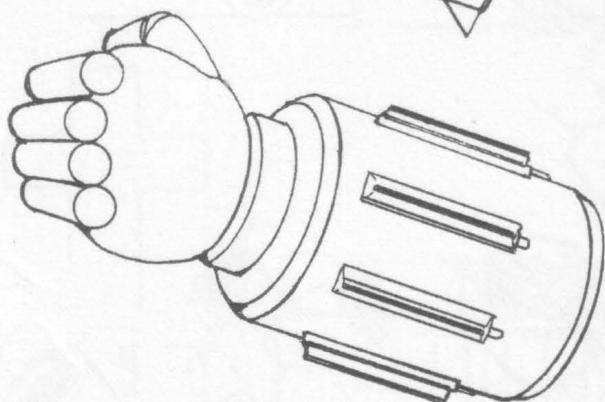
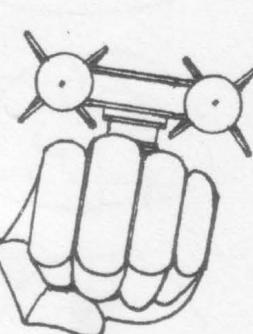
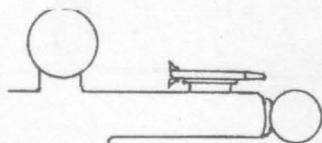
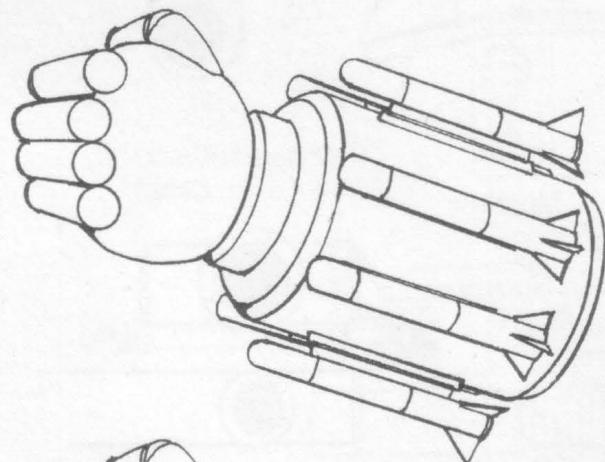
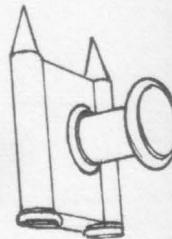
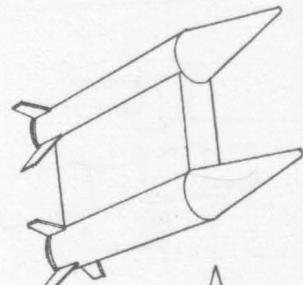
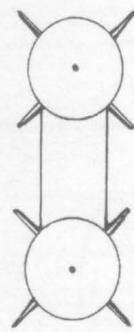
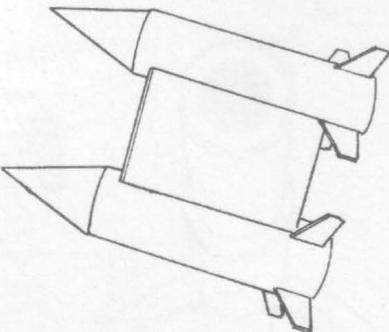
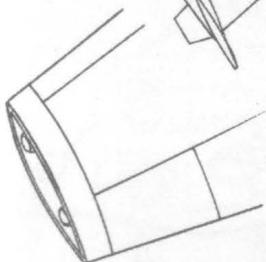
Sidewinder

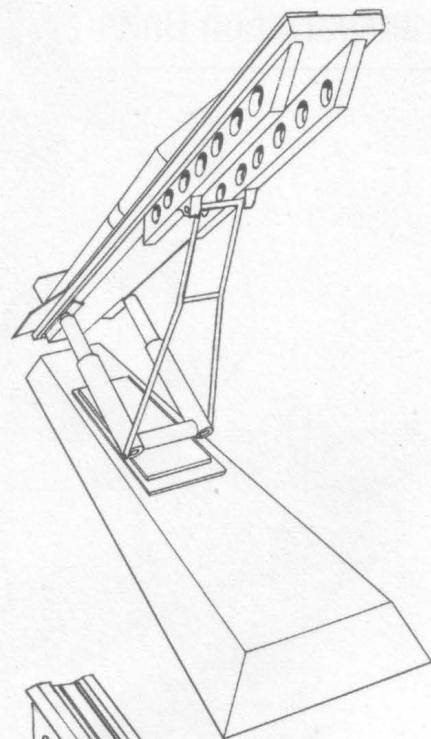
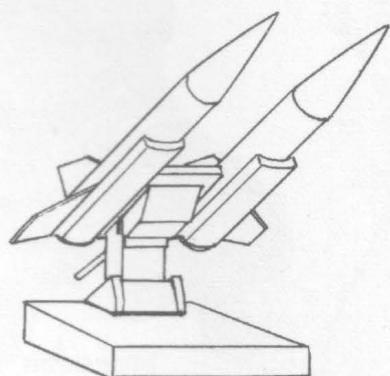
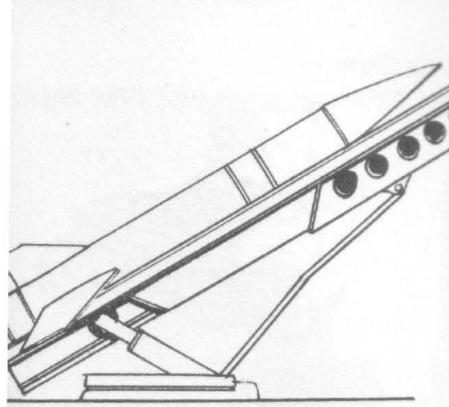


Double  
missiles can  
be attached in  
a variety of  
ways.

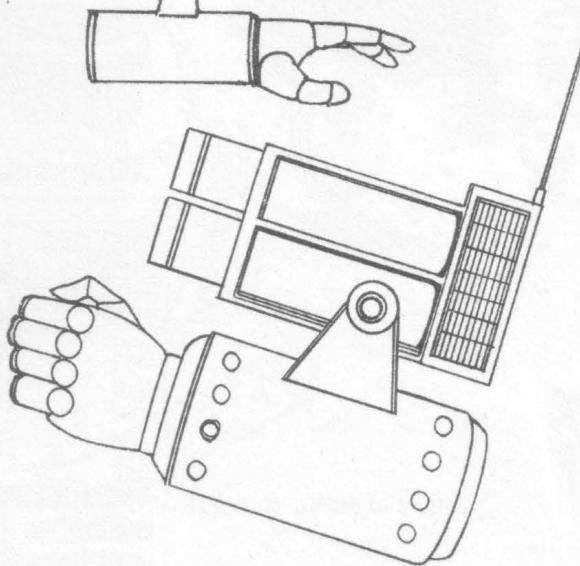
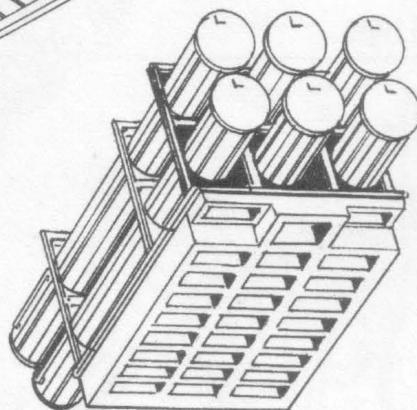
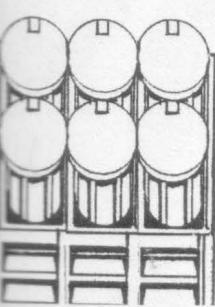
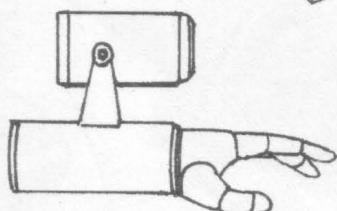
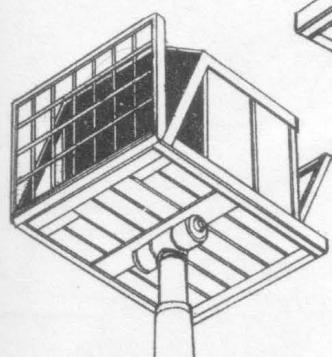
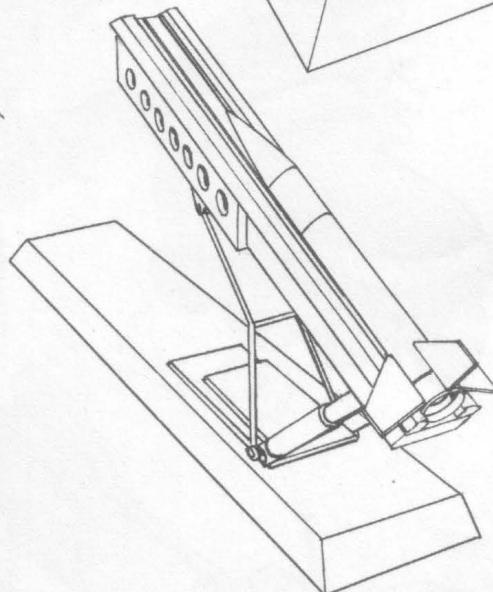
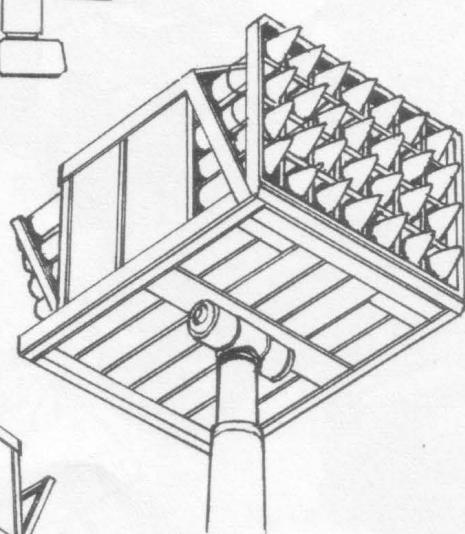
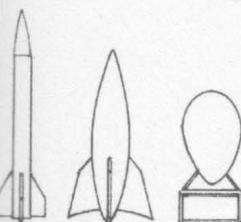
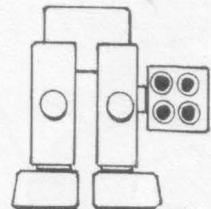
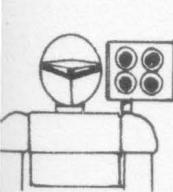
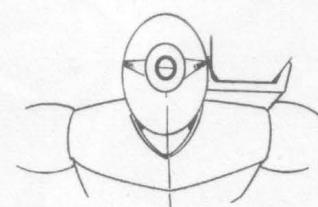
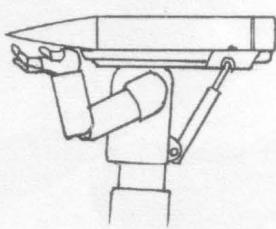


Attachment of missiles is simple.



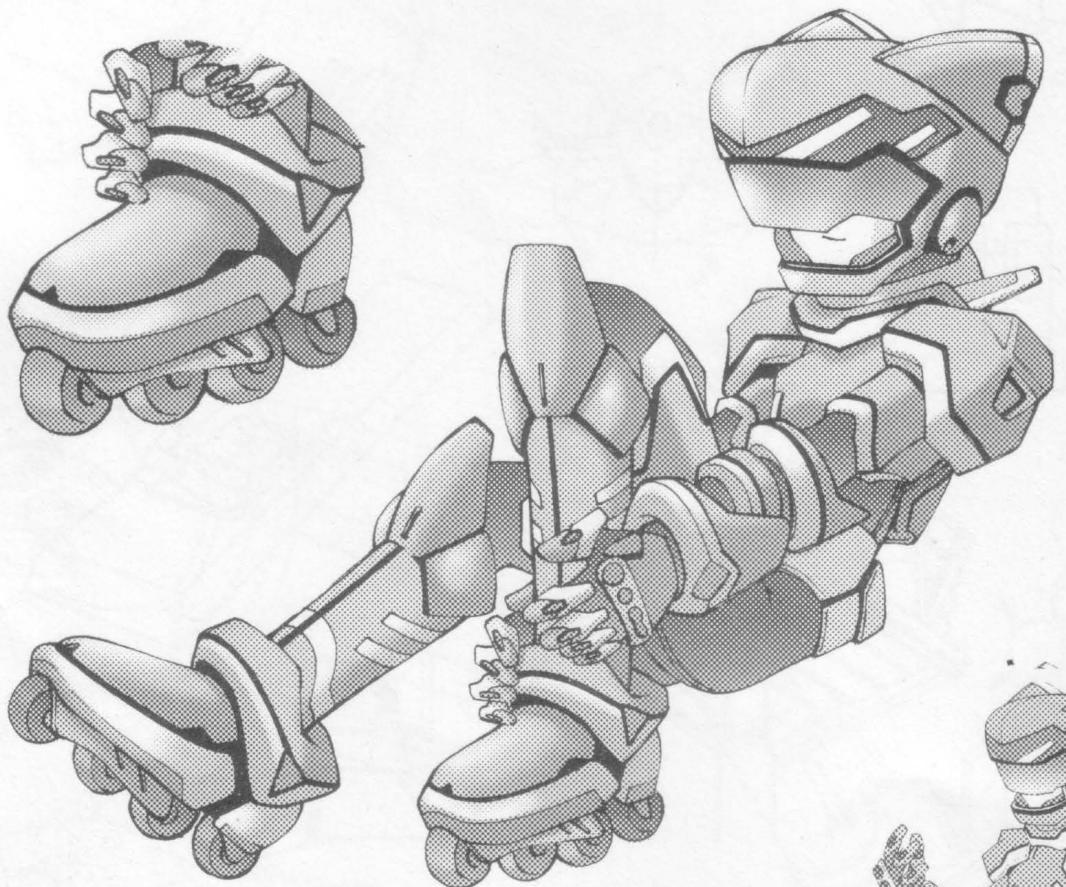
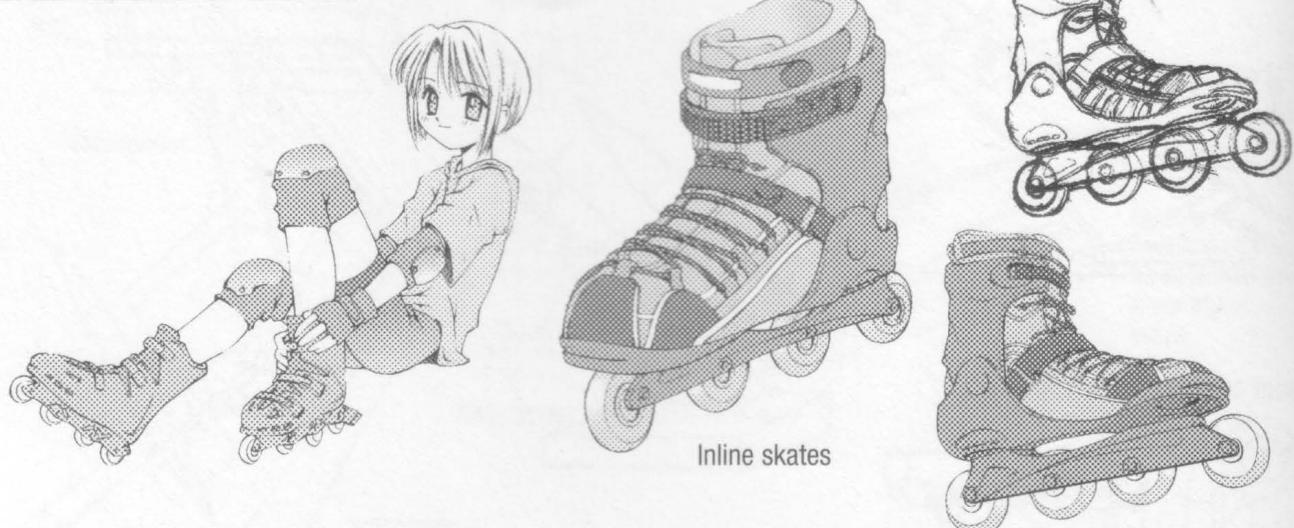


Mount launcher on back of robot

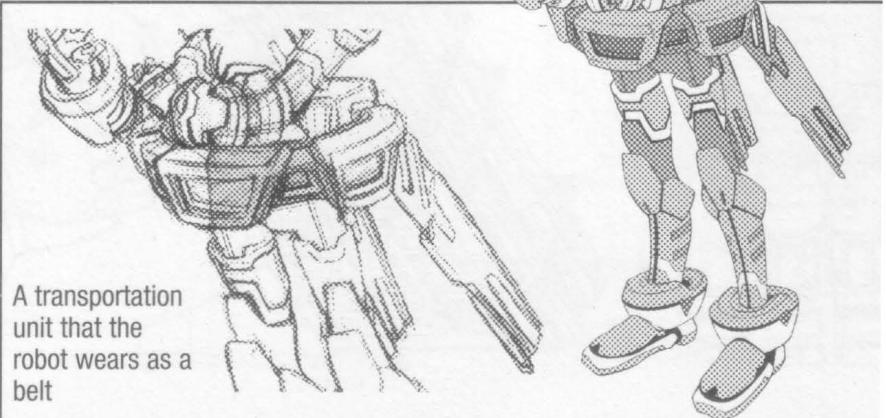


## Transportation Units

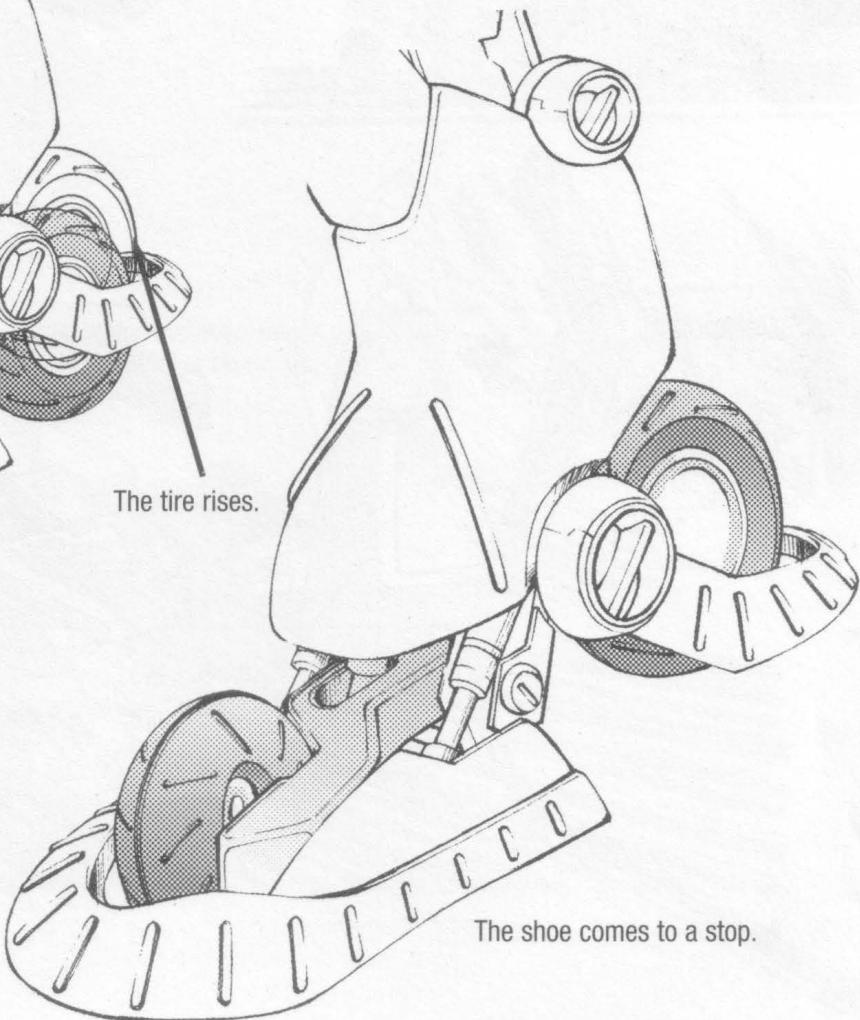
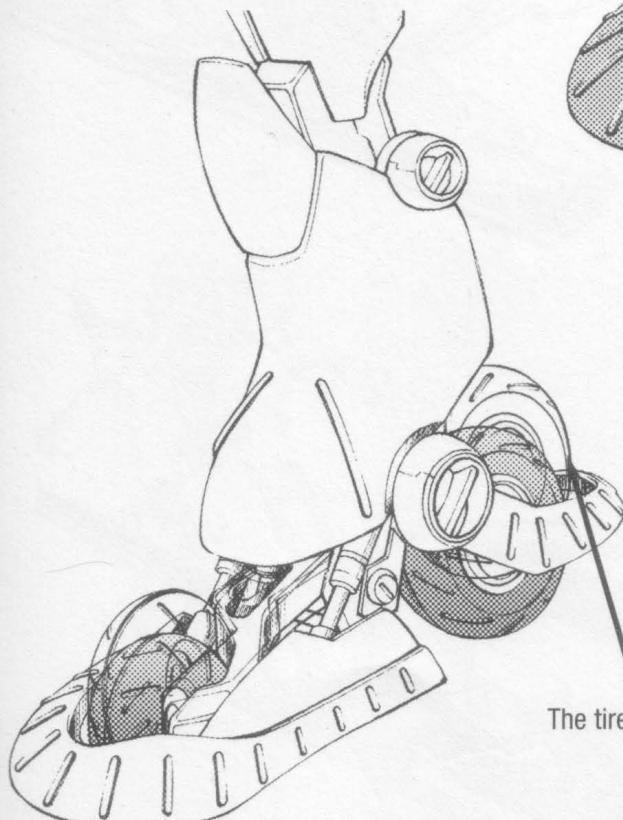
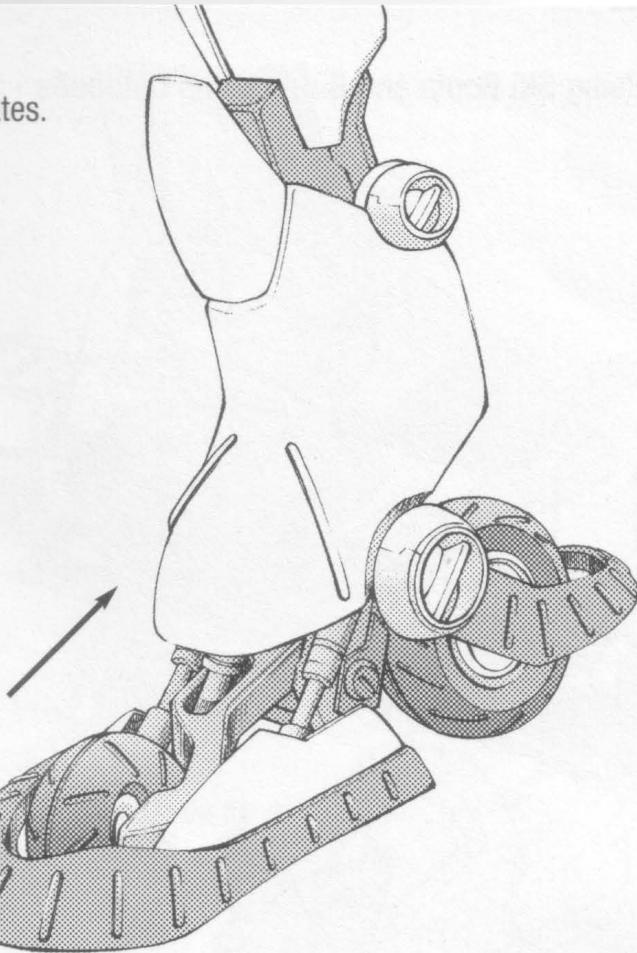
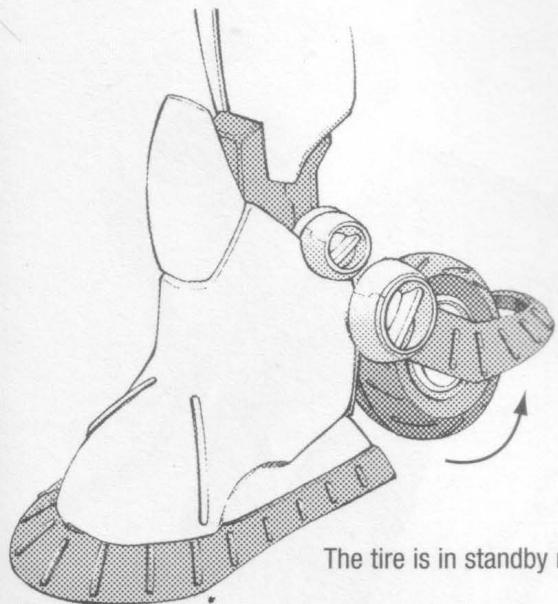
Common items such as skates can be transformed into high-tech conveyances.



Wrap-around hips

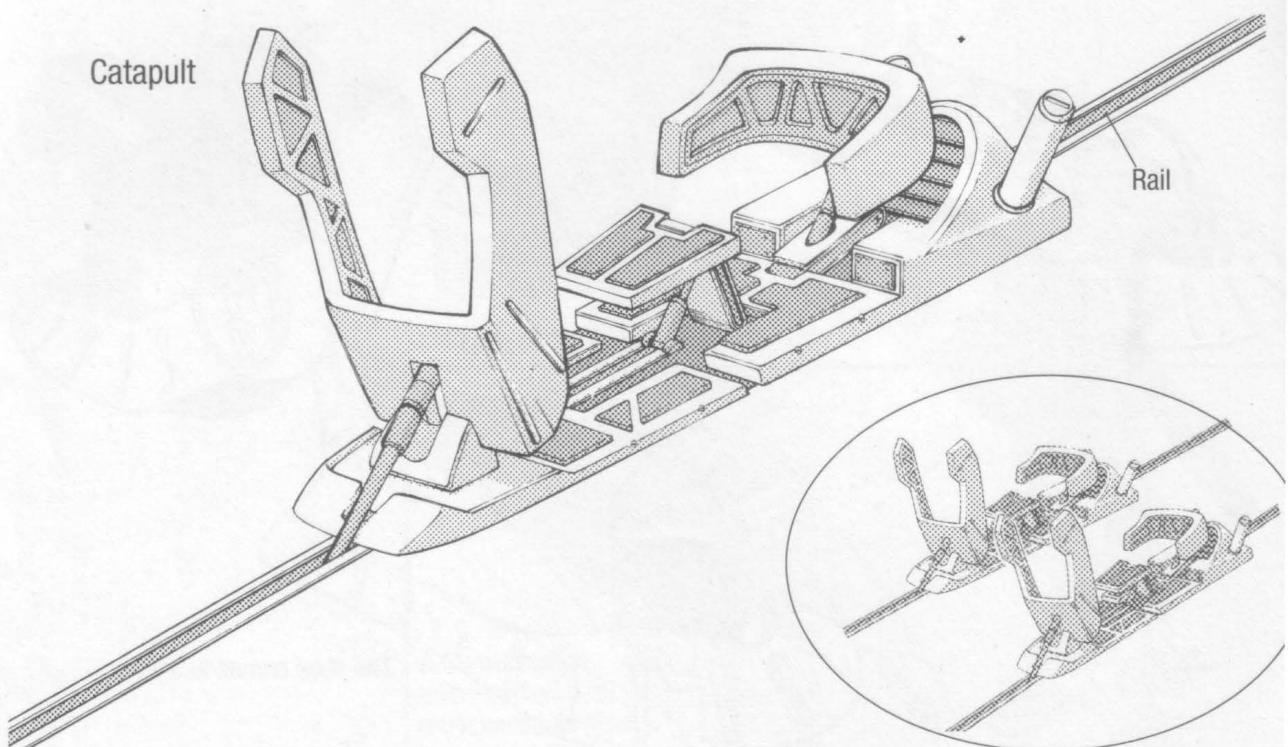
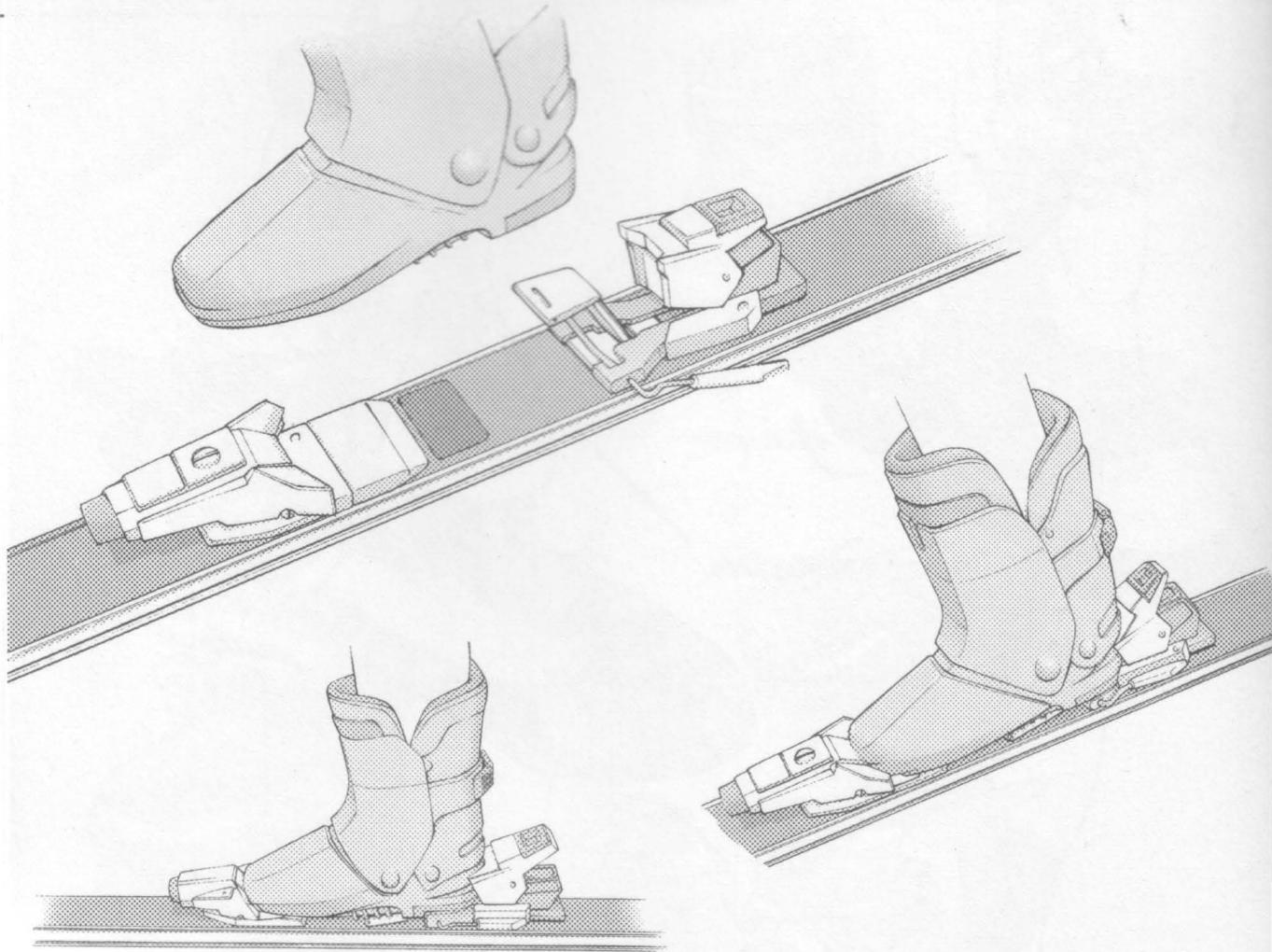


Shoes with tires have the same form as inline skates.



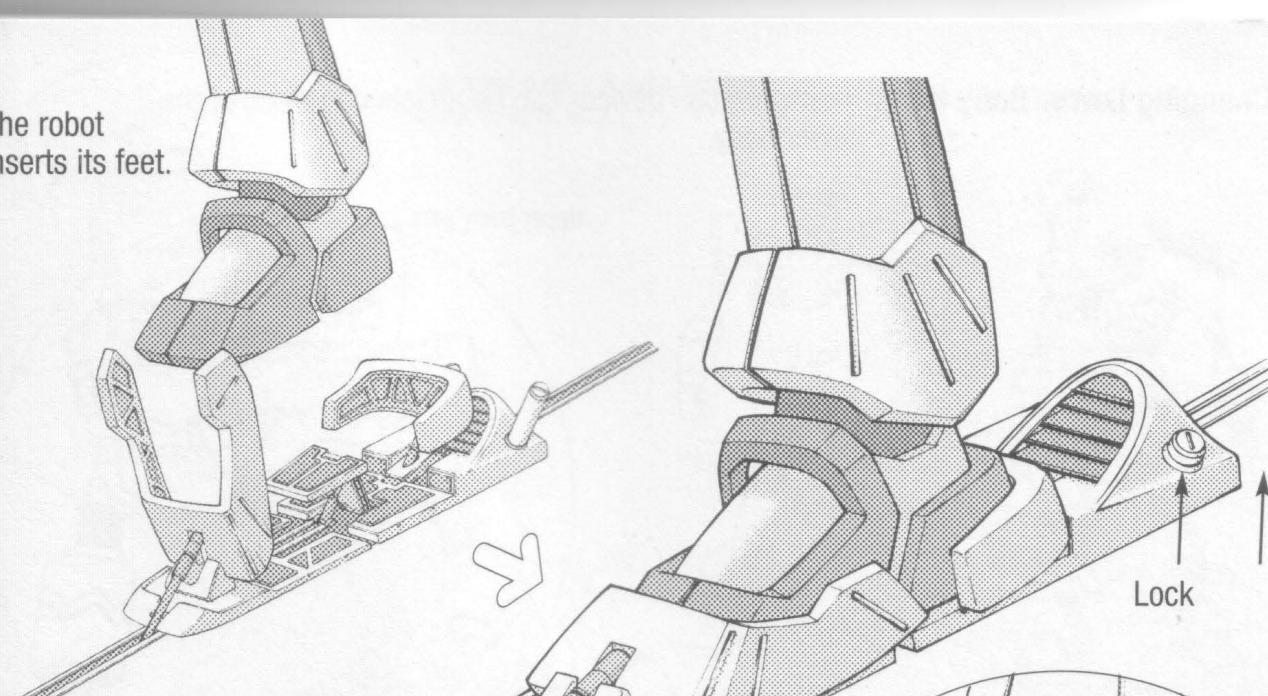
The shoe comes to a stop.

## Using Ski Boots and Bindings as Catapults

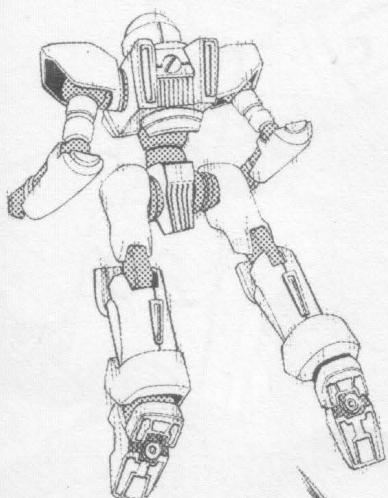


They usually come in a set of two placed side by side

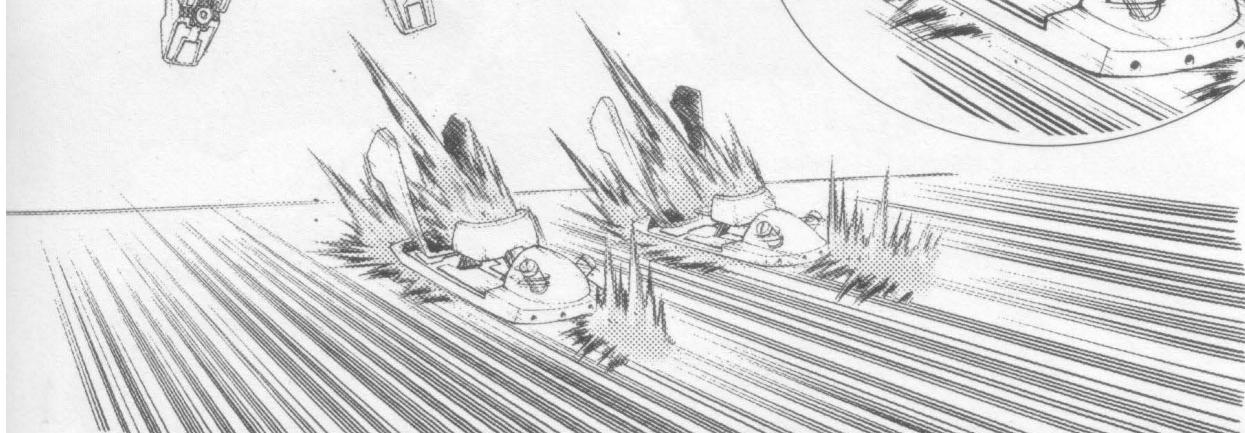
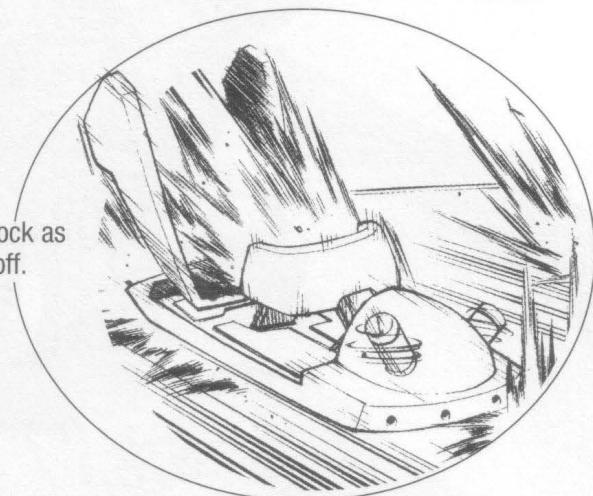
The robot inserts its feet.



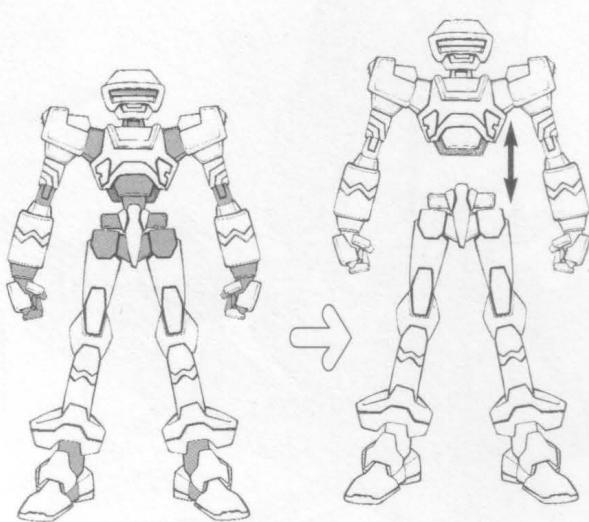
Don't make the ski  
too thick.



The bindings unlock as  
the robot blasts off.

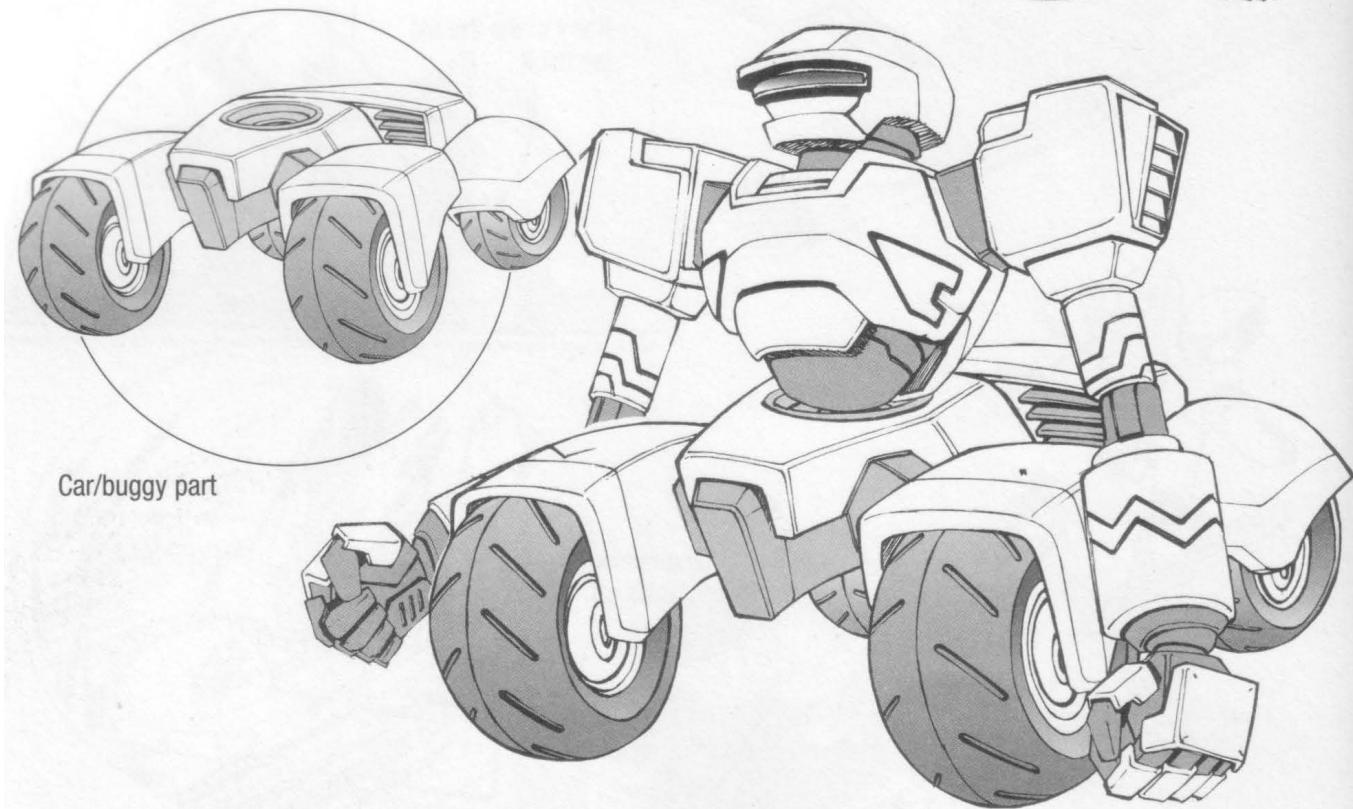
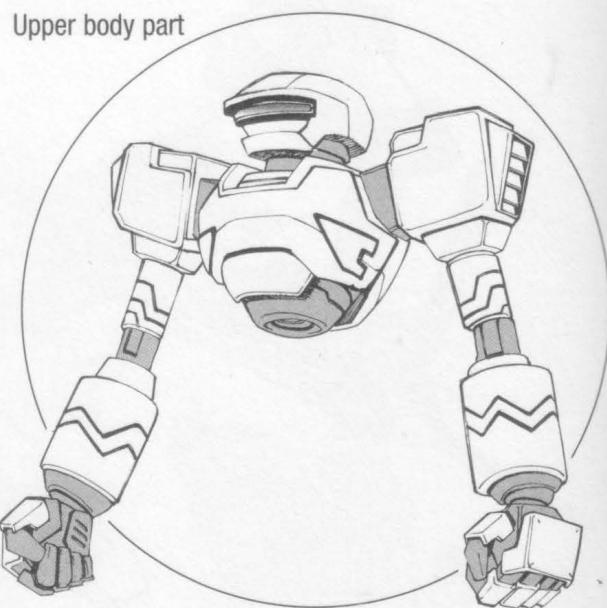


**Changing Lower Body Parts** Transportation devices can be attached in place of the lower body.



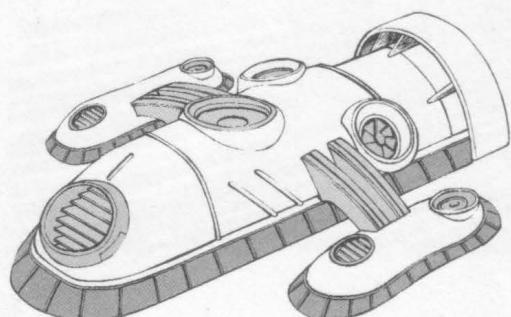
Basic style

Detach upper and lower body.

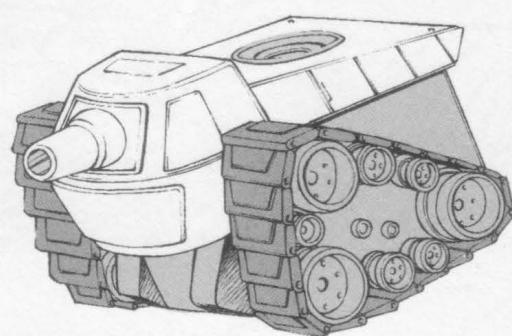


Car/buggy part

You are free to choose any transportation device.

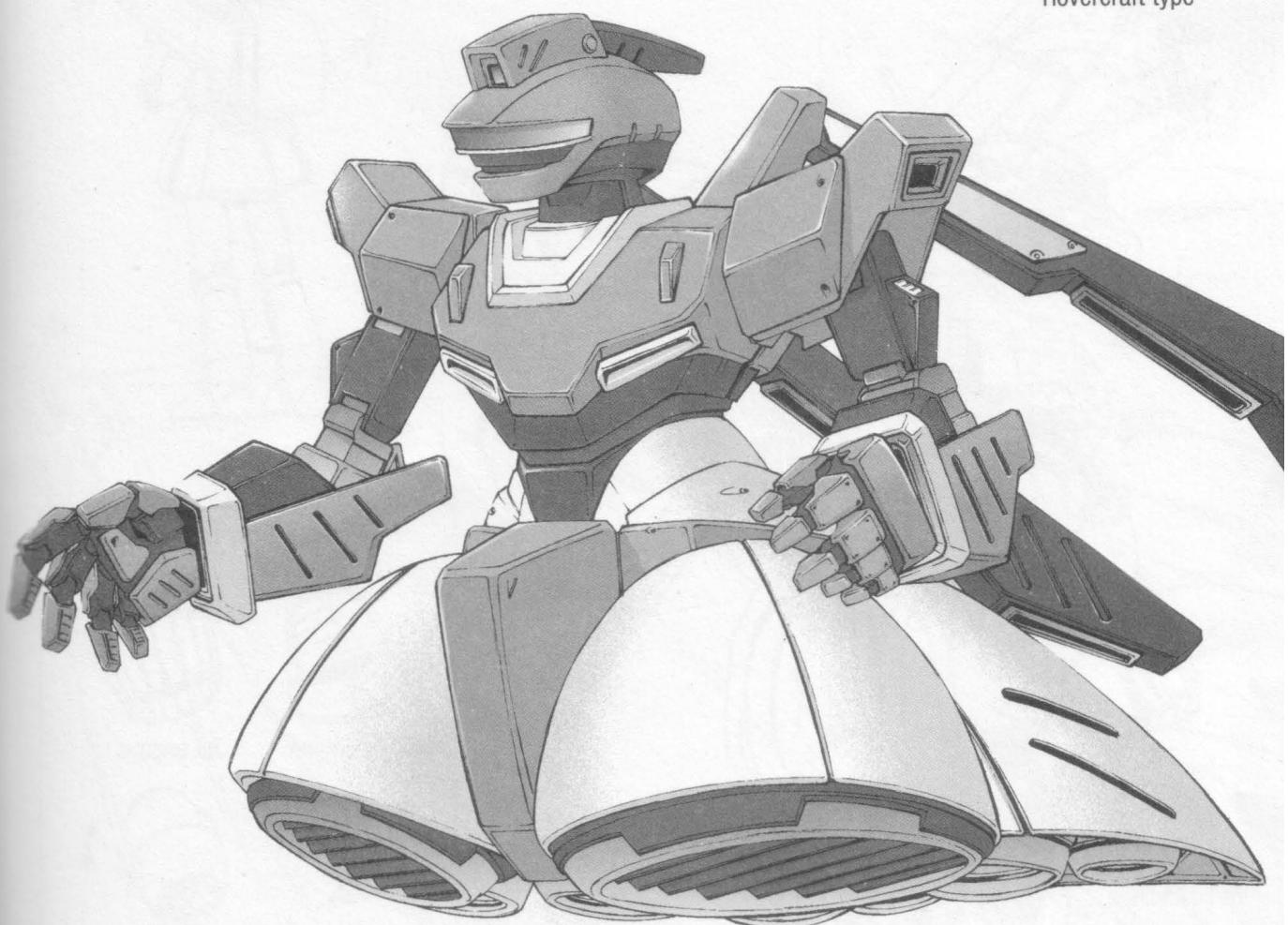
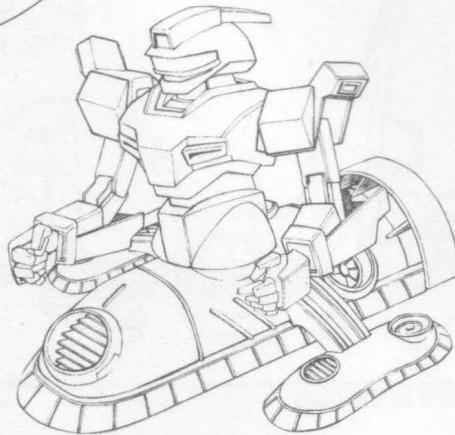
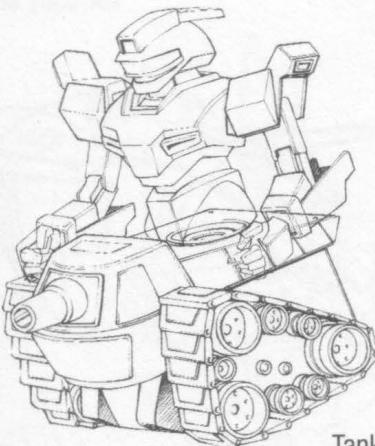
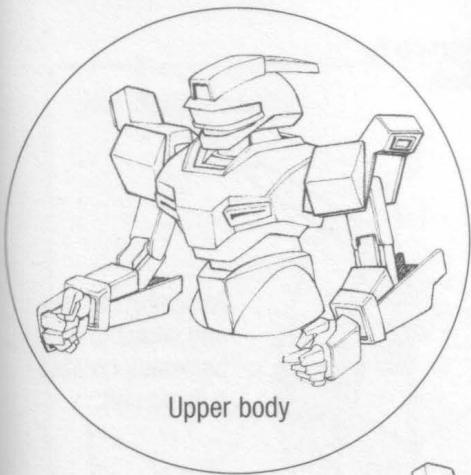


Marine type



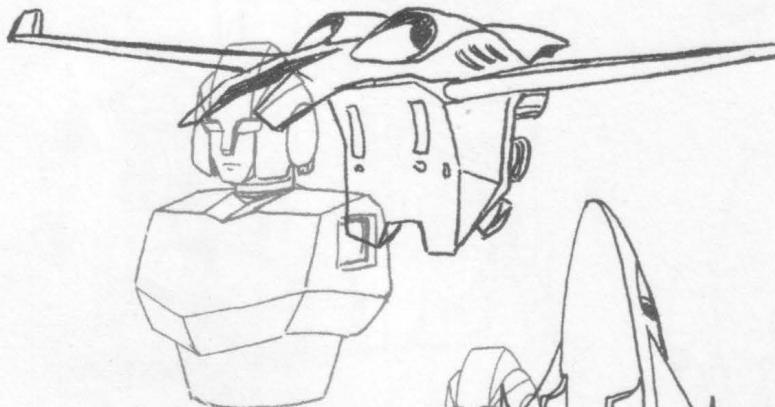
Tank type

The robot does not even need a lower body at first.

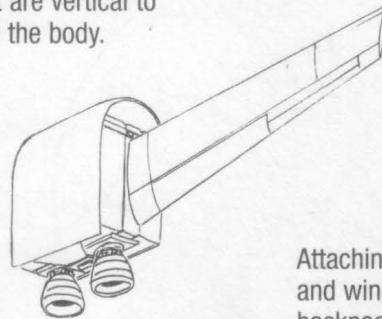


## Flying Parts and Wings

There are two types of wings: Those that are vertical to the body and those that are horizontal to the body.



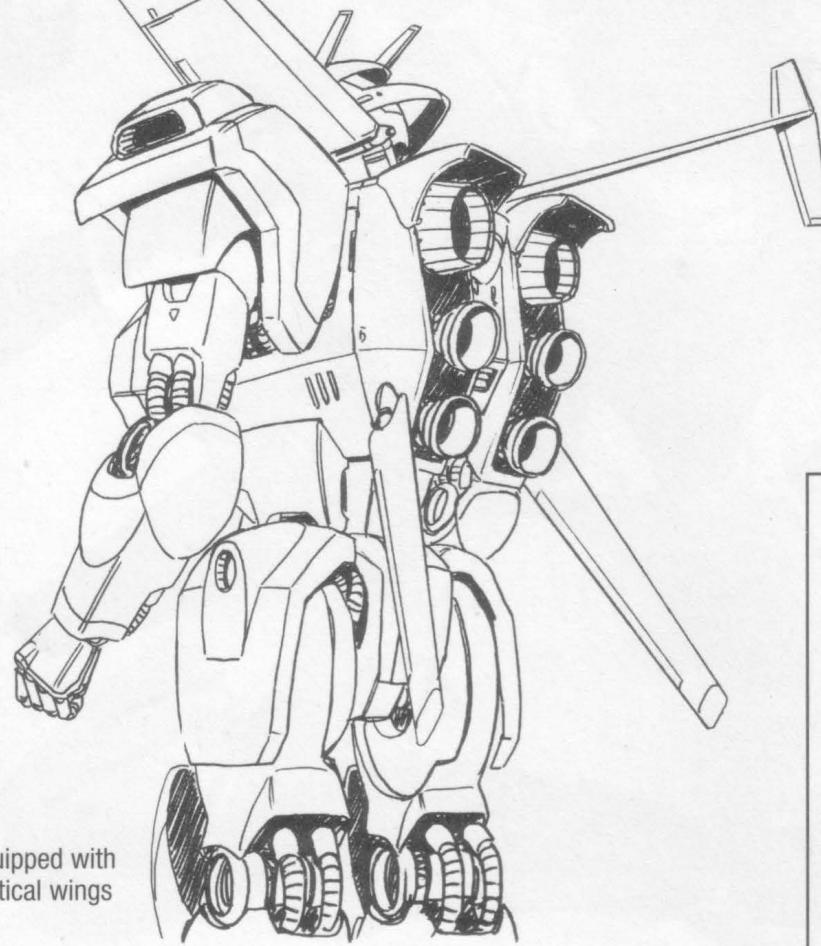
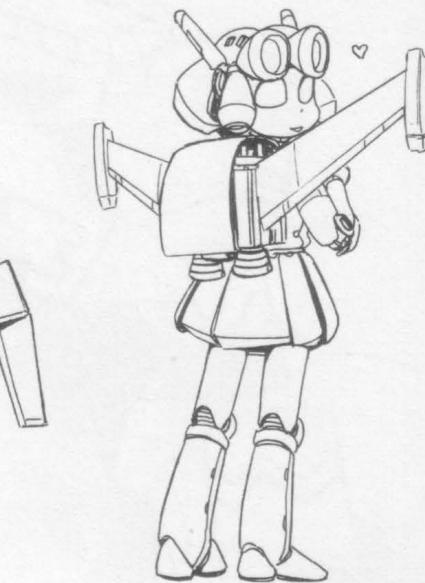
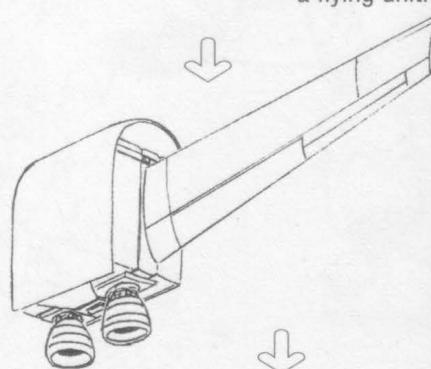
Wings vertical to the body



Attaching nozzles and wings to a backpack creates a flying unit.



Wings horizontal to the body



Equipped with vertical wings

### Propulsion nozzles



Rocket engine



Jet engine



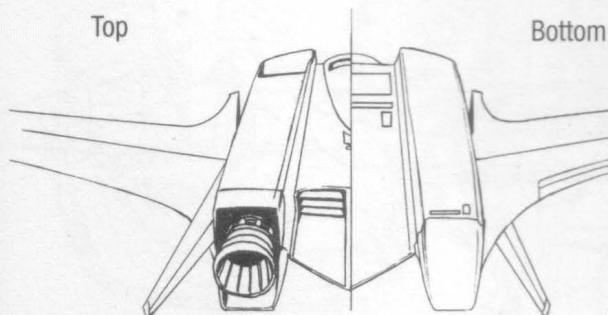
Square jet



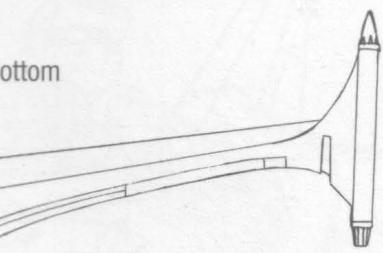
Round jet

### Horizontal wings

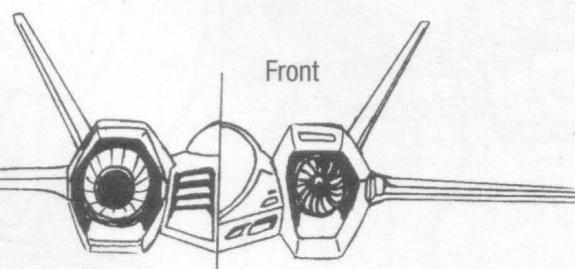
Top



Bottom



Back

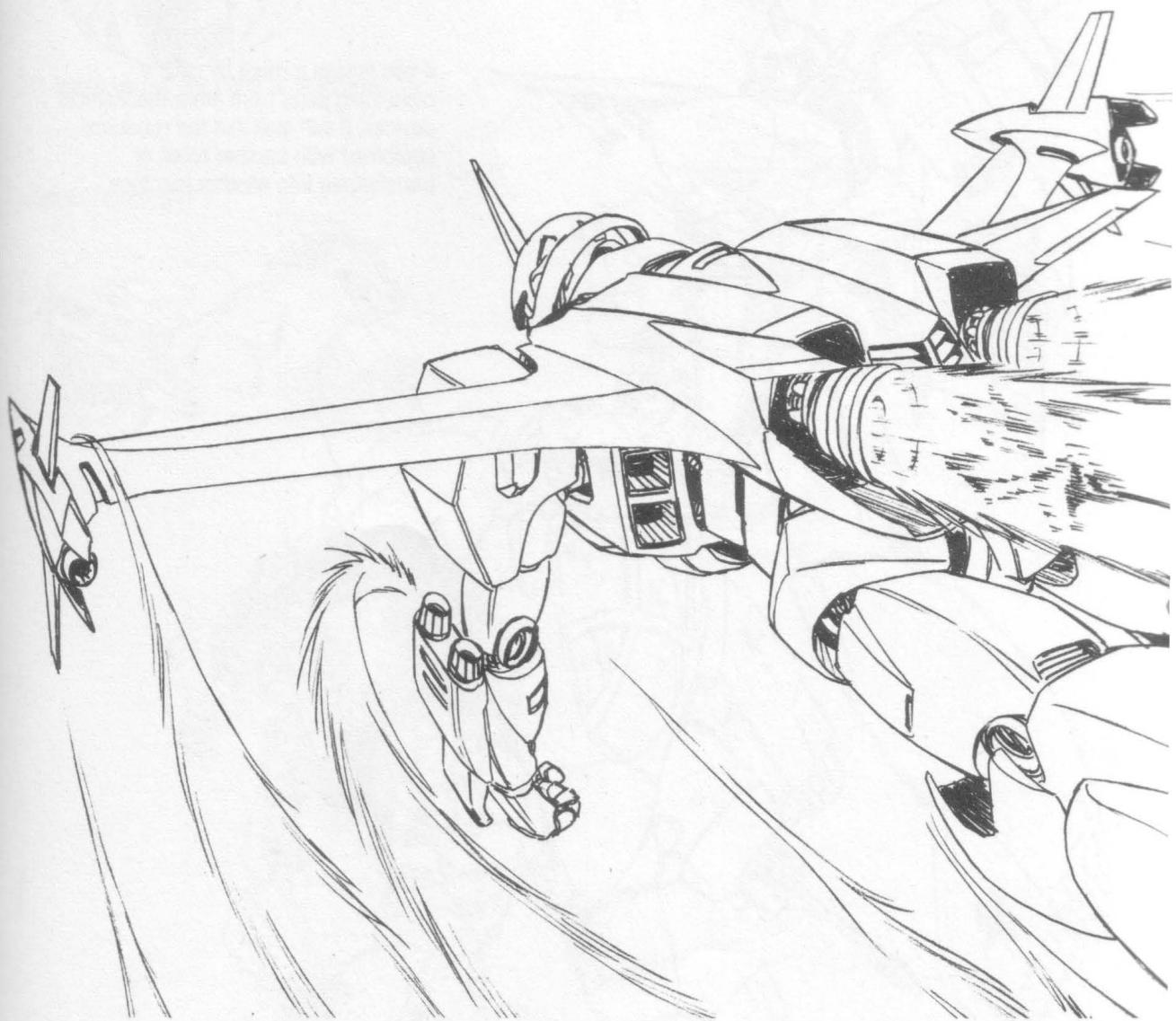


Front



Side

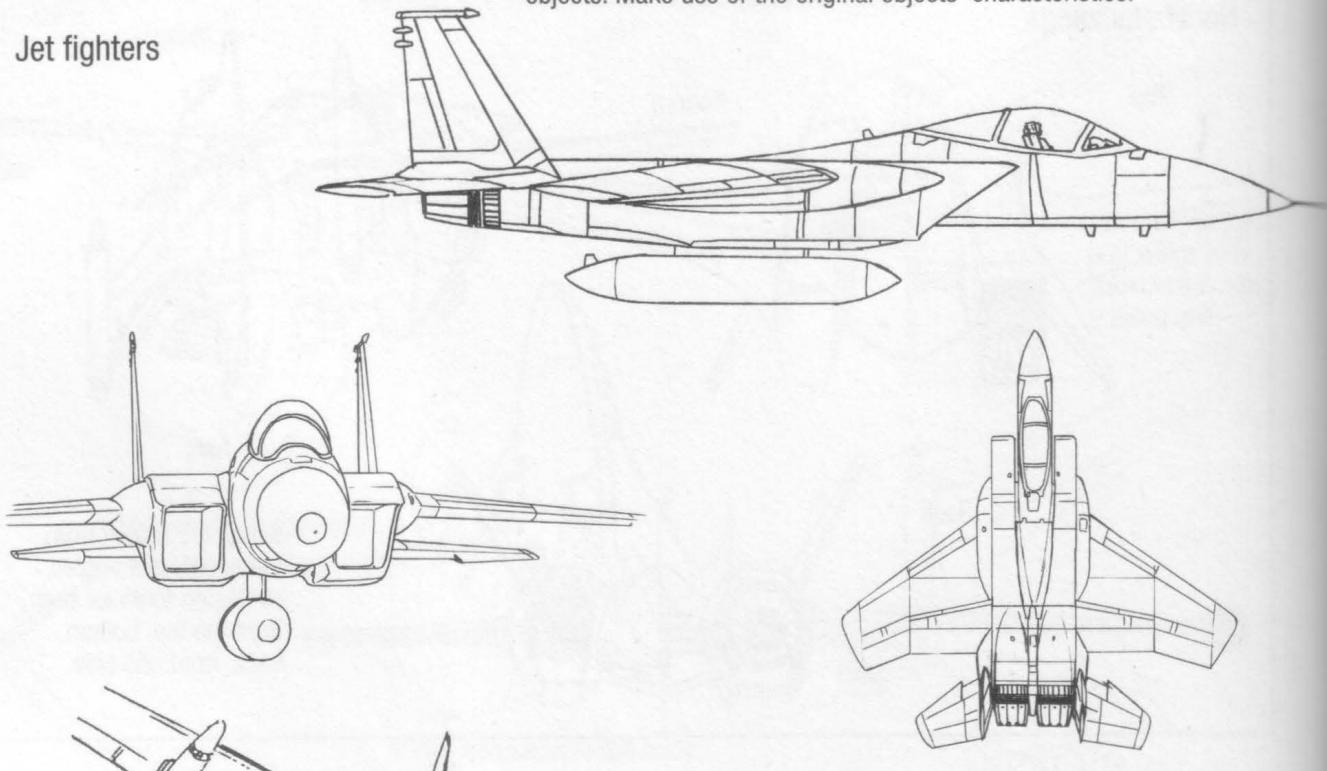
Wings are drawn from many different angles, so design them as seen from the top, bottom, back, front and side.



## Transformers

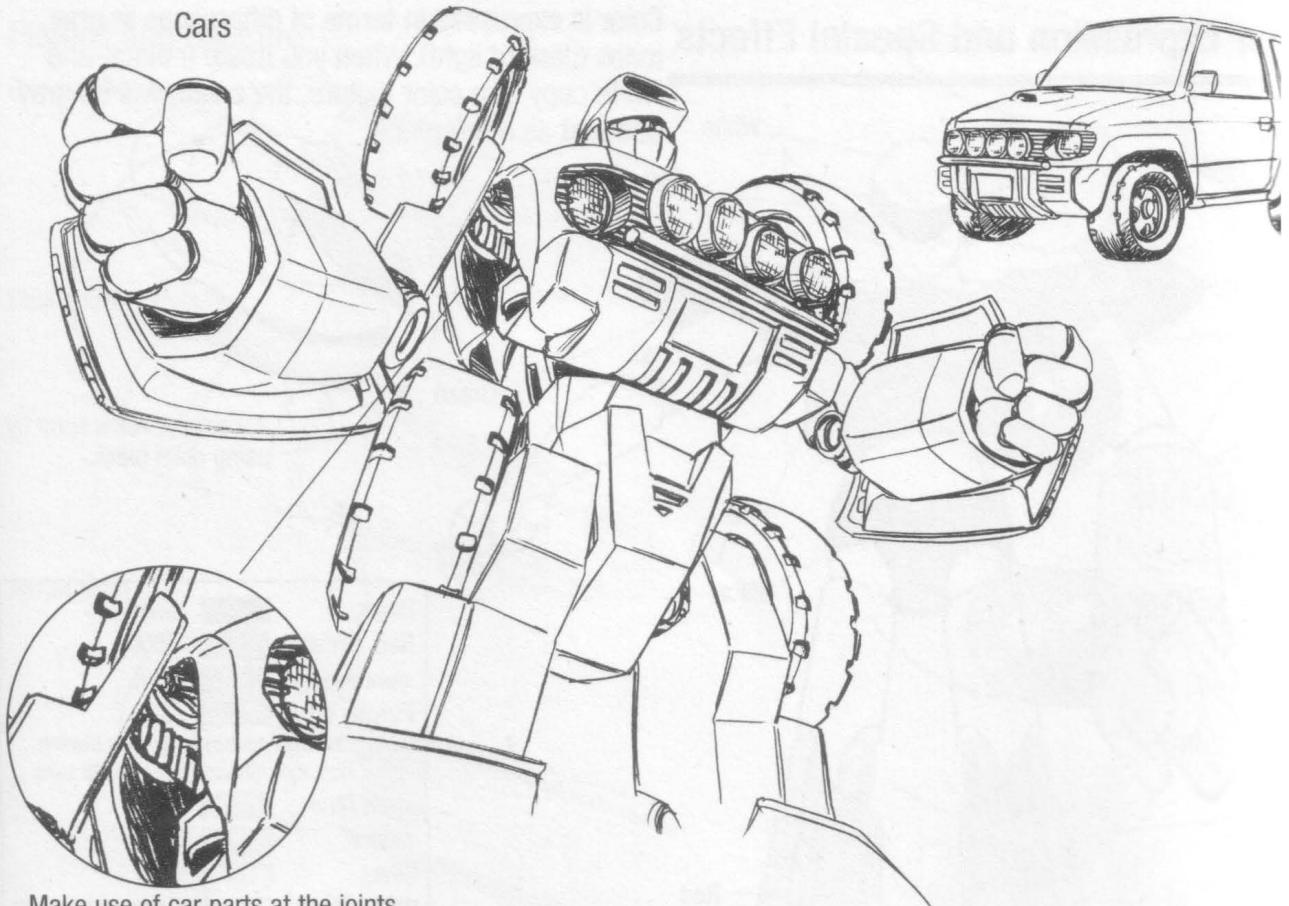
### Jet fighters

Create a robot by combining parts from jet fighters, cars and other objects. Make use of the original objects' characteristics.



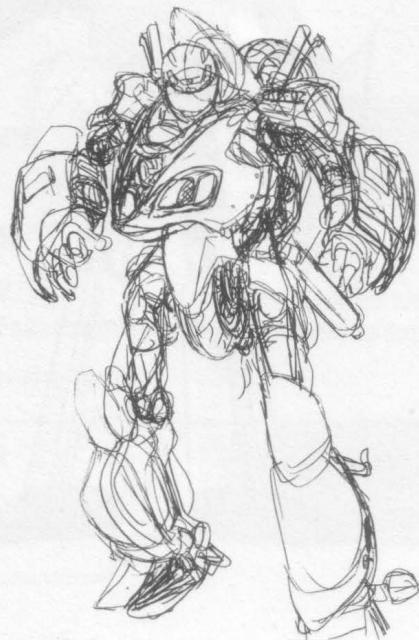
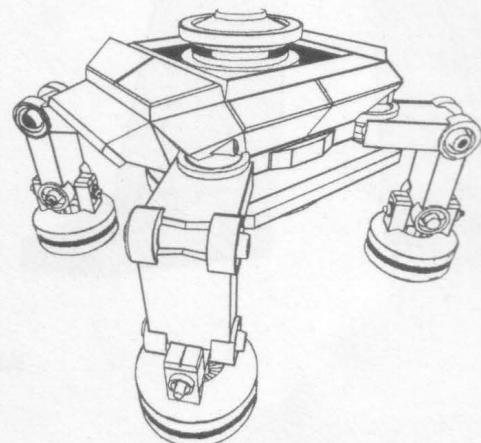
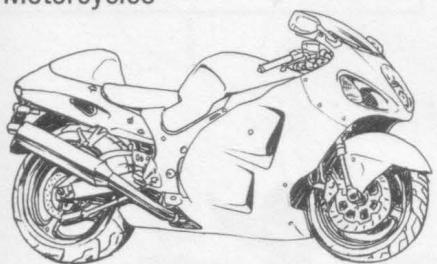
If you design a robot by clearly combining parts from other mechanical devices, it will look like the robot has combined with another robot or transformed into another machine.

Cars



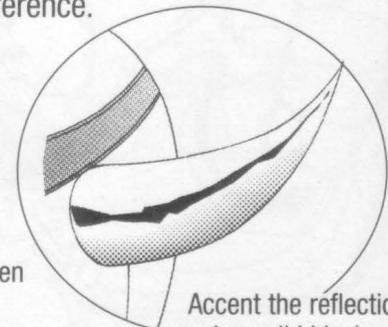
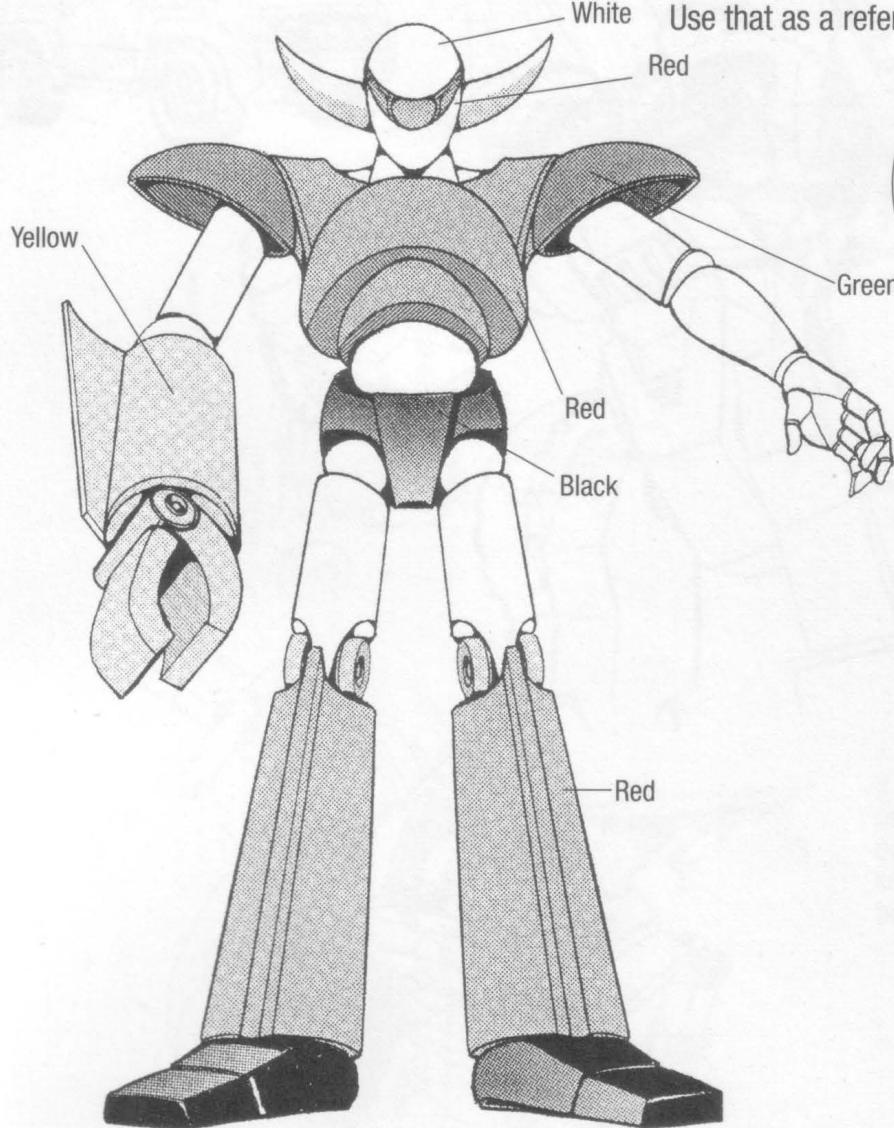
Make use of car parts at the joints.

Motorcycles



## Color Expression and Special Effects

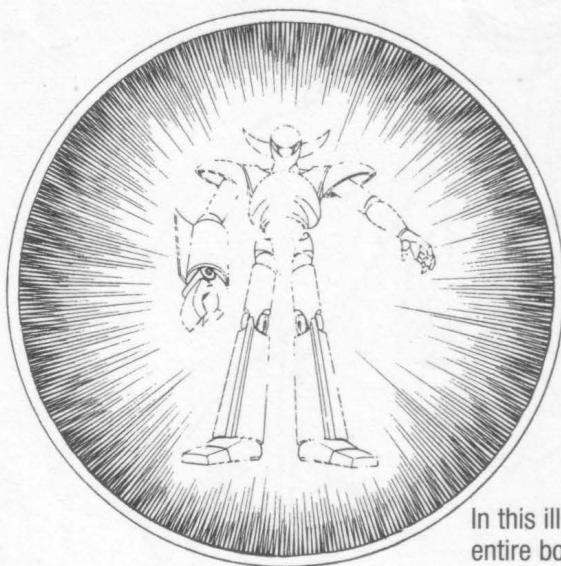
Color is expressed in terms of differences in gray tones (dark or light). When you make a black-and-white copy of a color picture, the colors will be gray. Use that as a reference.



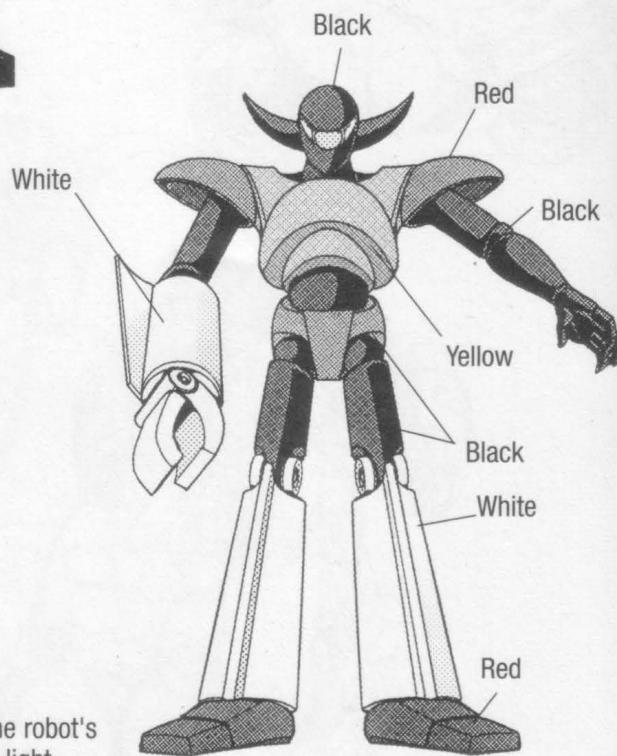
Accent the reflections by using solid black.

|                                                                             |  |            |
|-----------------------------------------------------------------------------|--|------------|
| Black                                                                       |  | Solid      |
| Red, green<br>(dark colors)                                                 |  | 30%        |
| Purple, blue                                                                |  | 25%        |
| Gold                                                                        |  | 20%        |
| *Increase contrast of gold by planing dark tone. Should combine with solid. |  |            |
| Light blue                                                                  |  | 15%        |
| Yellow                                                                      |  | 10%        |
| Silver                                                                      |  | 5%         |
| White, light                                                                |  | White (0%) |

\*In general, use dark tone for dark colors and strong colors and light tone for light colors. You should have contrast in at least two places, i.e., dark/light (apply, do not apply, etc.).

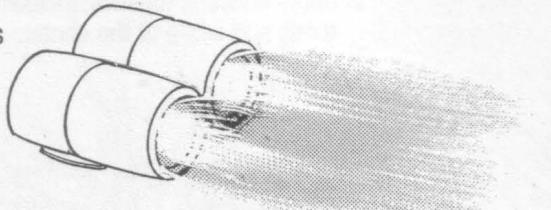


In this illustration, the robot's entire body radiates light.

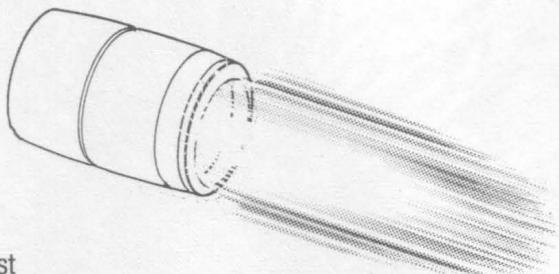


## Flames and Backfire

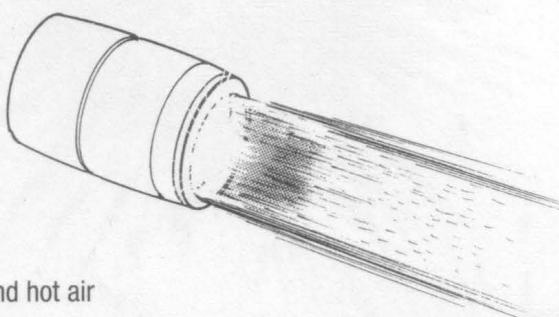
Red flames



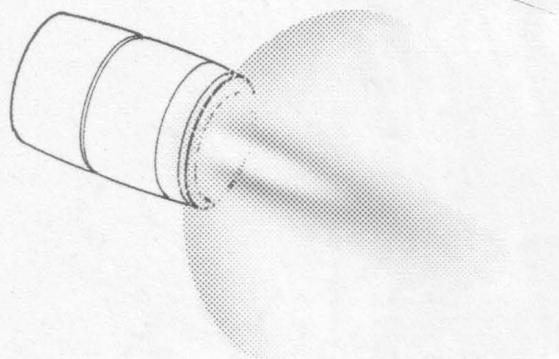
Blue and white flames



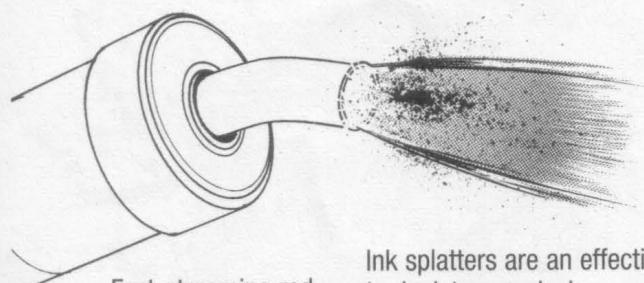
Air/jet blast



Flames and hot air

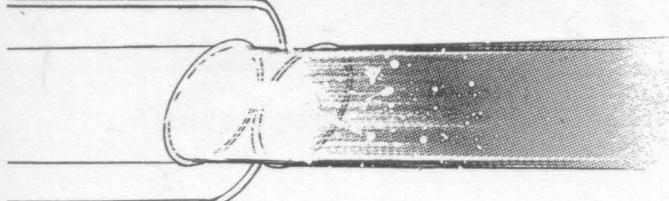


Red accompanied by explosion

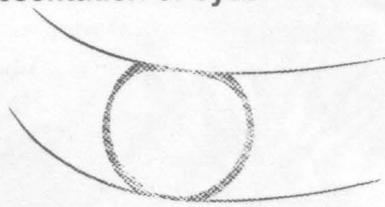


Fast-streaming red

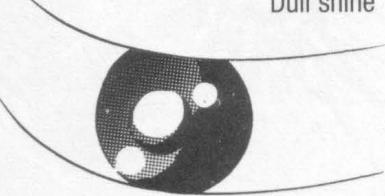
Ink splatters are an effective way to depict an explosion.



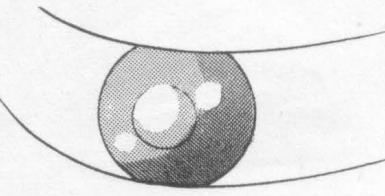
## Presentation of eyes



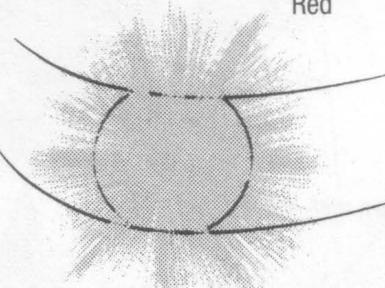
Dull shine



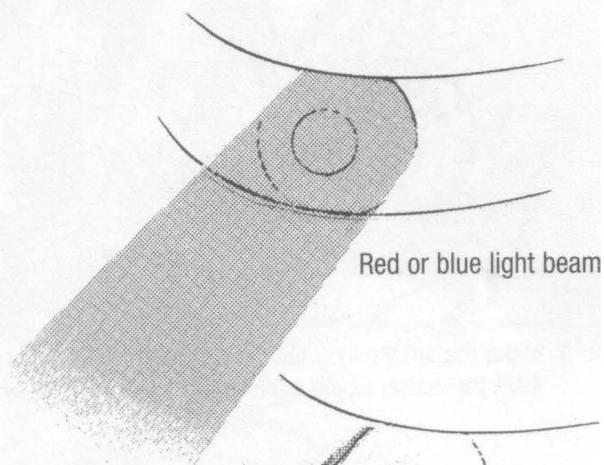
Normal eye



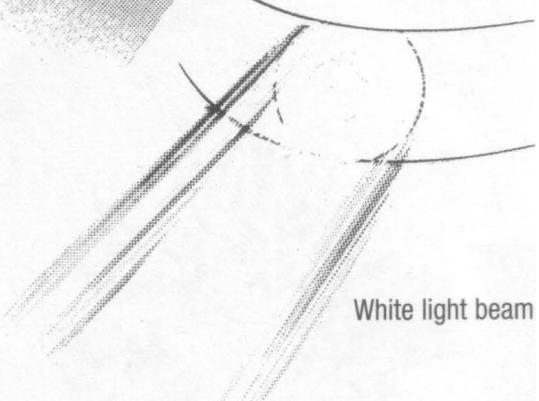
Red



Shining red

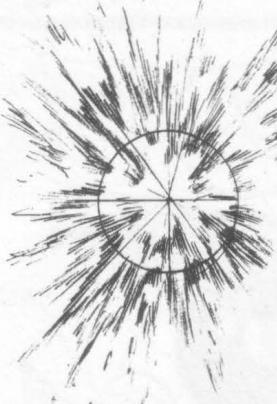


Red or blue light beam

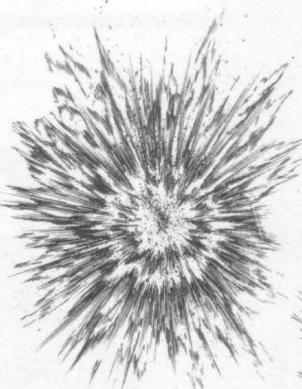


White light beam

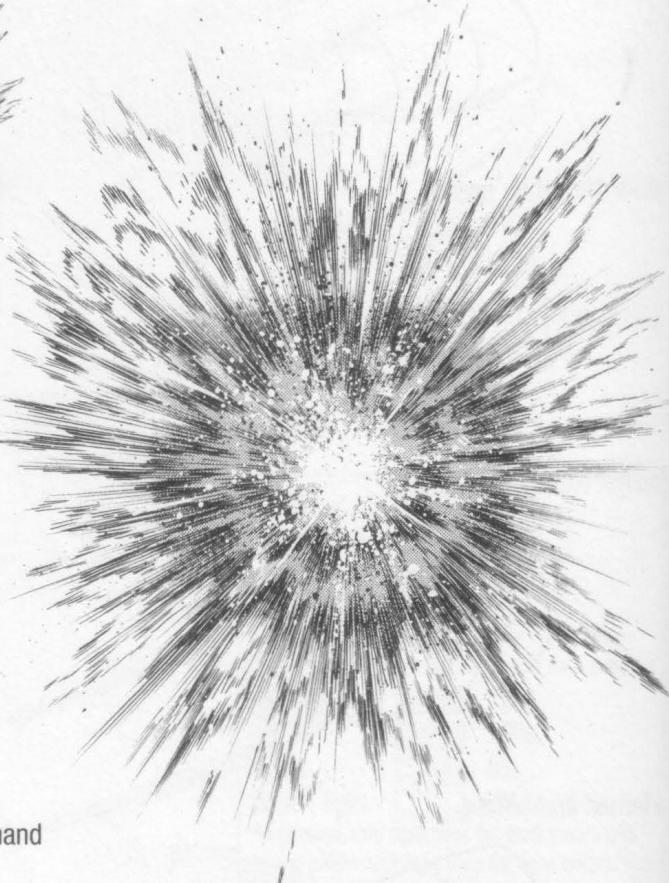
## Explosions and Smoke



1. Make a rough sketch



2. Draw with pen

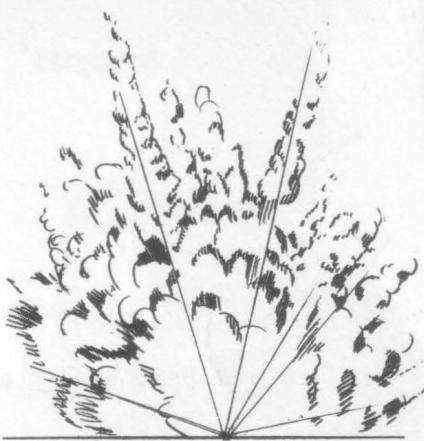


3. Apply finishing touches, including tones and white at the center.

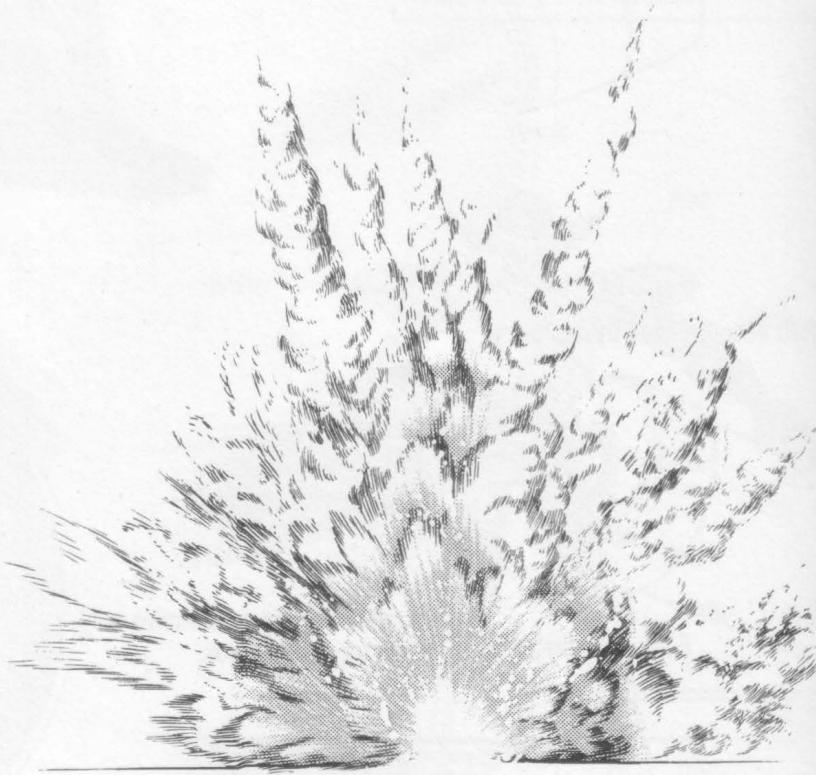


Drawn with ruler

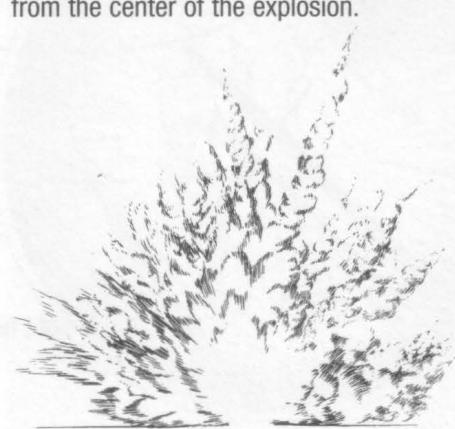
Drawn with free hand



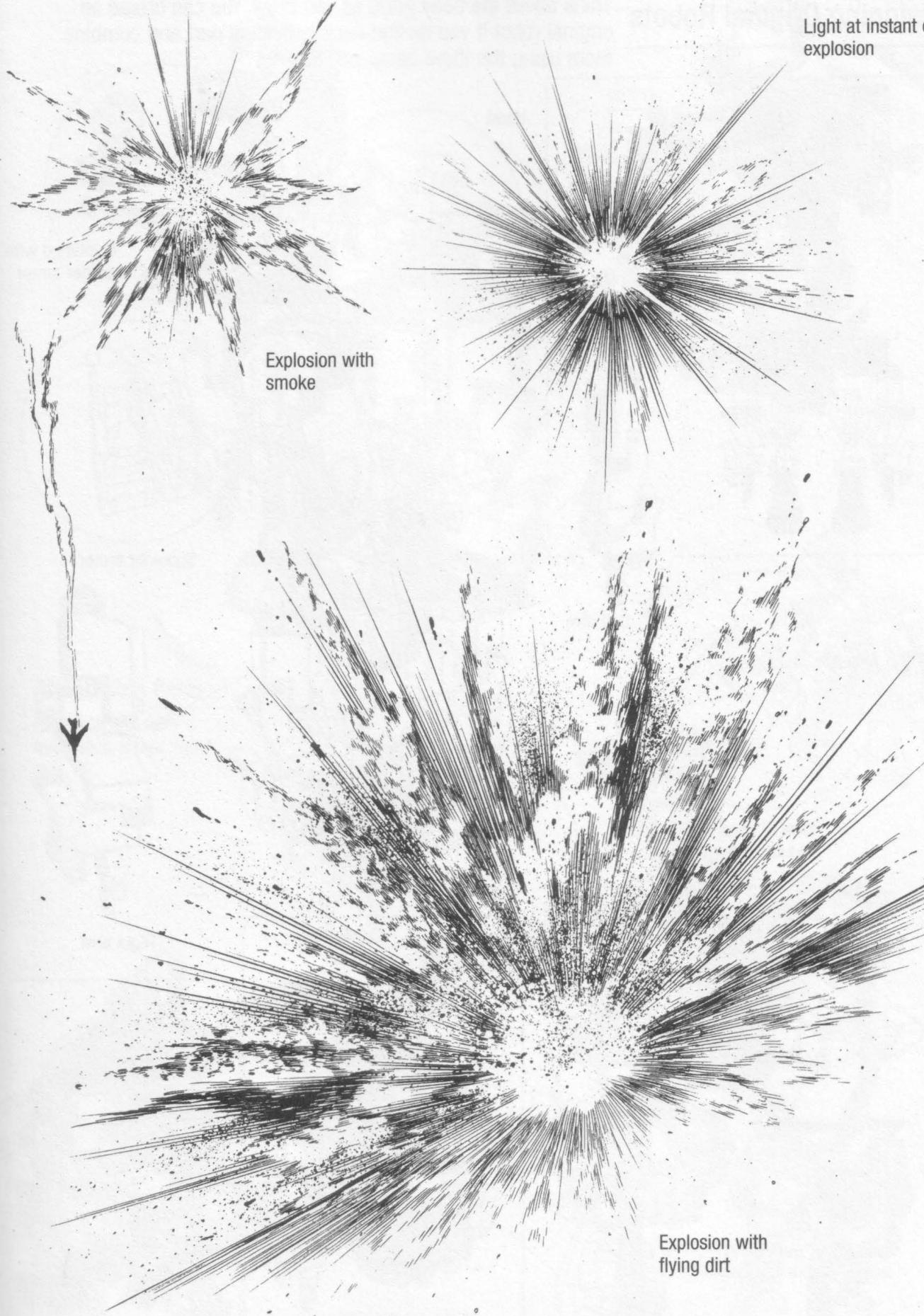
1. Make the smoke look like it emanates from the center of the explosion.



3. In the center use tone etching plus white.



2. Draw with pen. Do not use a ruler.



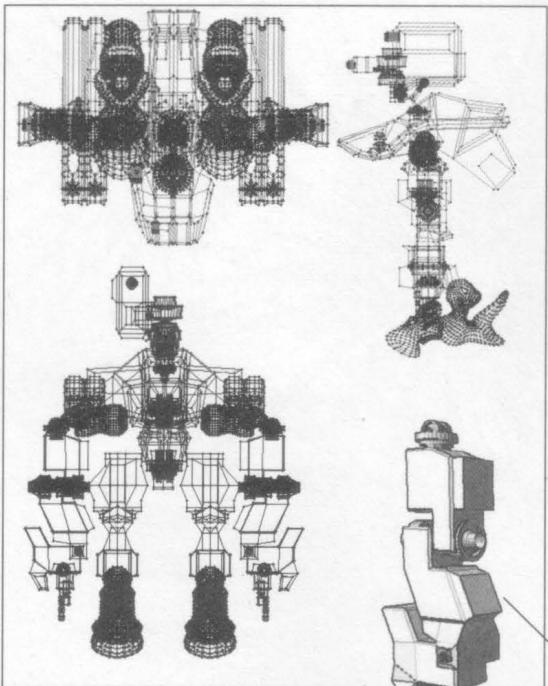
Light at instant of  
explosion

Explosion with  
smoke

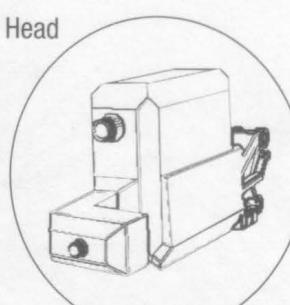
Explosion with  
flying dirt

## Designing Original Robots

Think about the body parts as you draw. You can create an original robot if you design each individual part and combine them using the three basic views.



Head



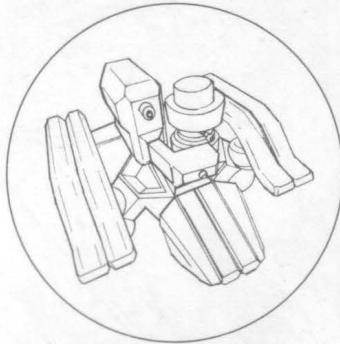
Auxiliary head part...



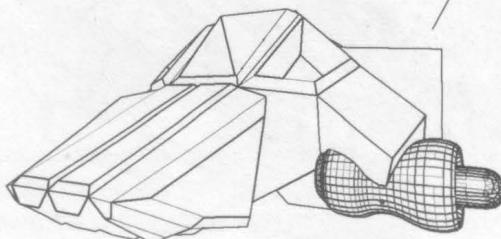
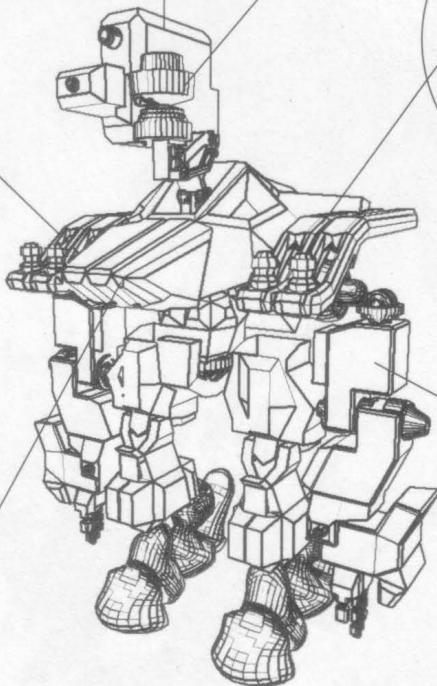
...combined with shoulder armor



Left arm

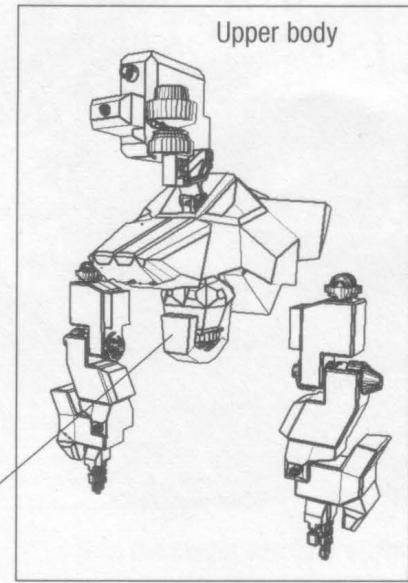
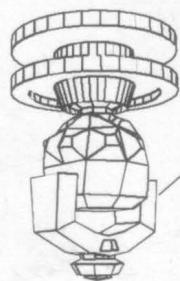
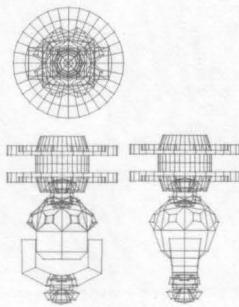


View of head and shoulders from above



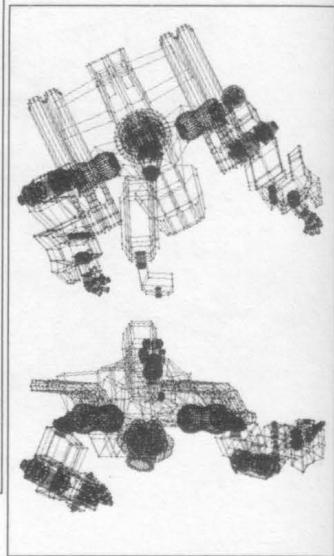
Chest

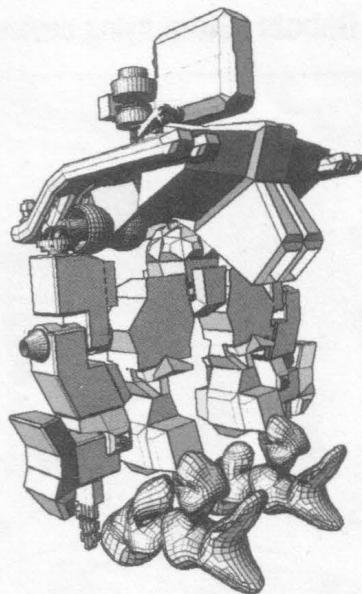
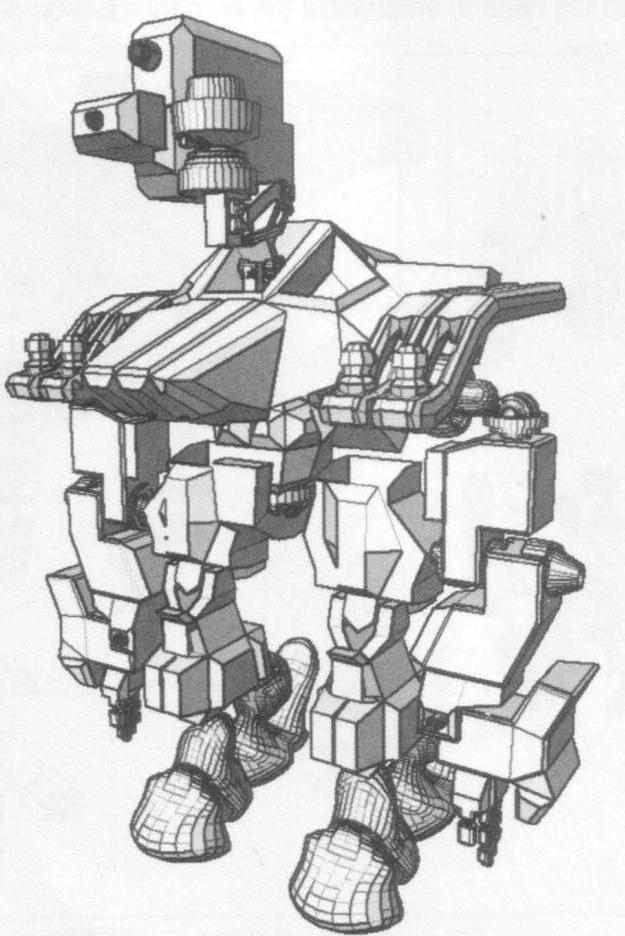
Core/movable unit



Upper body

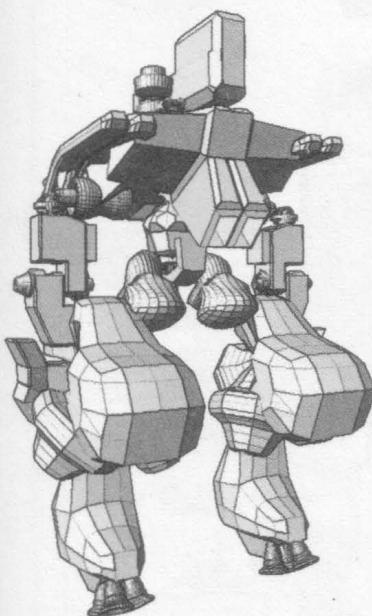
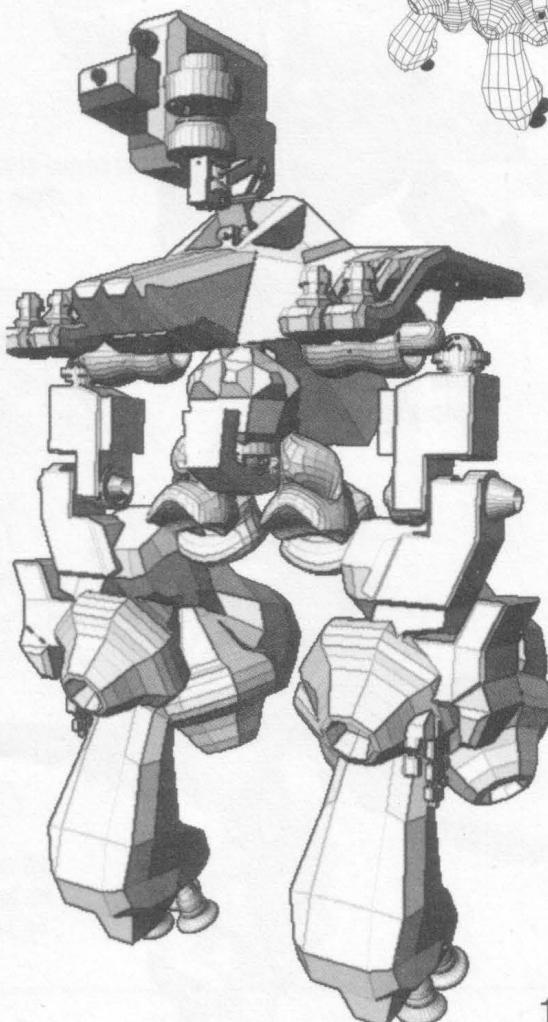
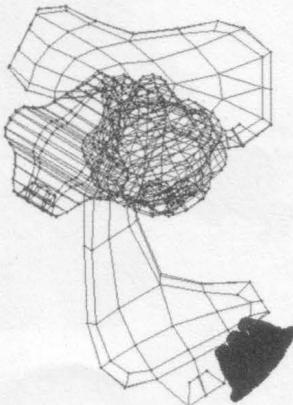
Right arm



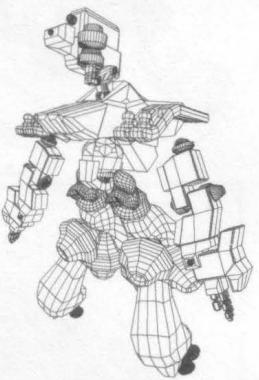


### Attach Shin Parts

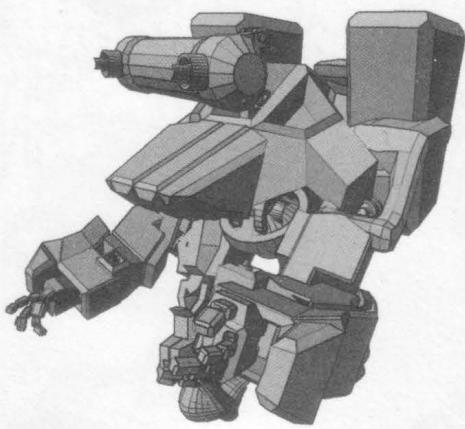
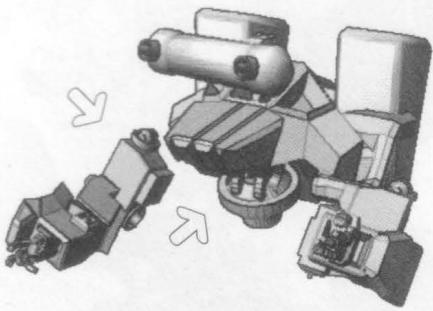
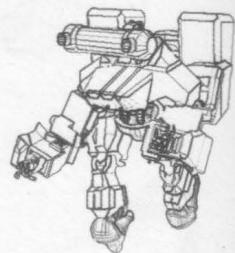
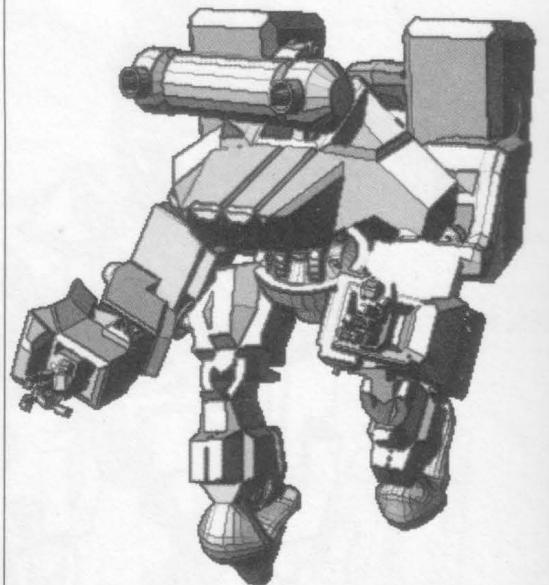
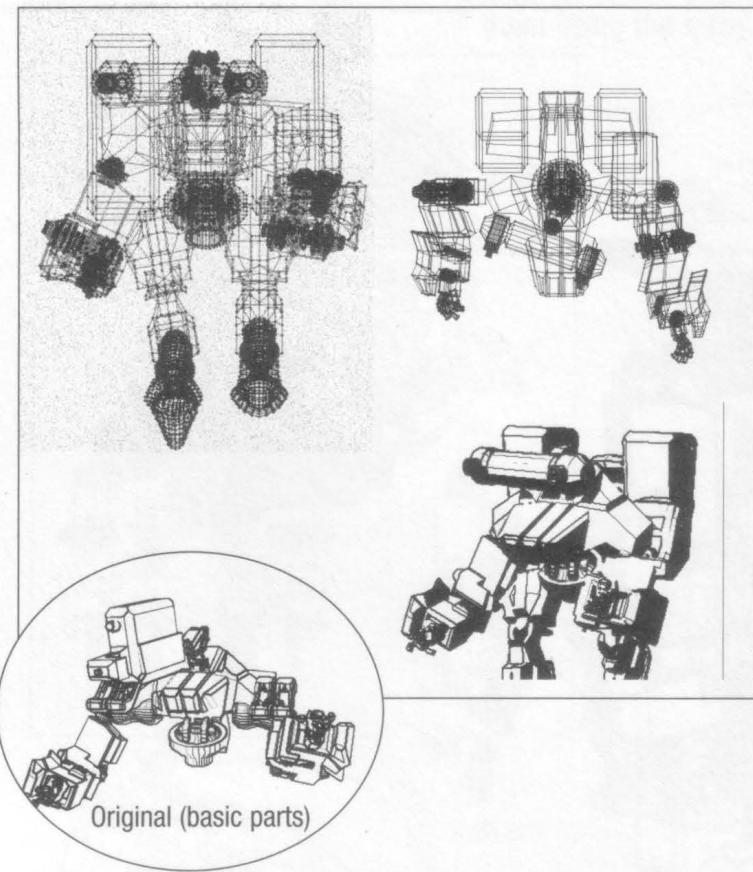
Reinforce legs with  
hydraulics, armor, flying  
aids, etc.



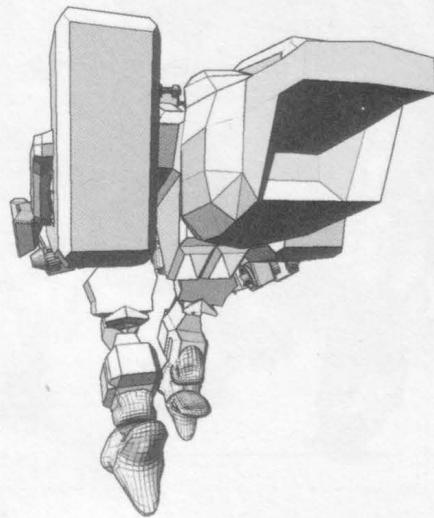
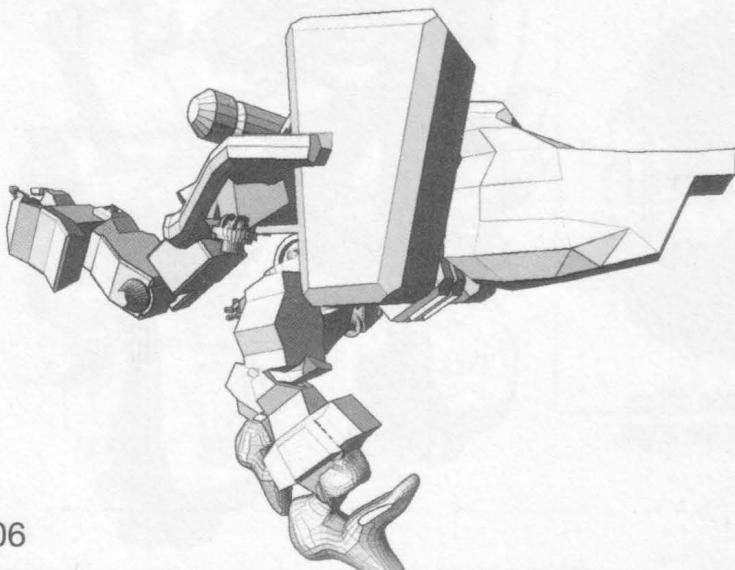
The appearance differs  
depending on the angle.



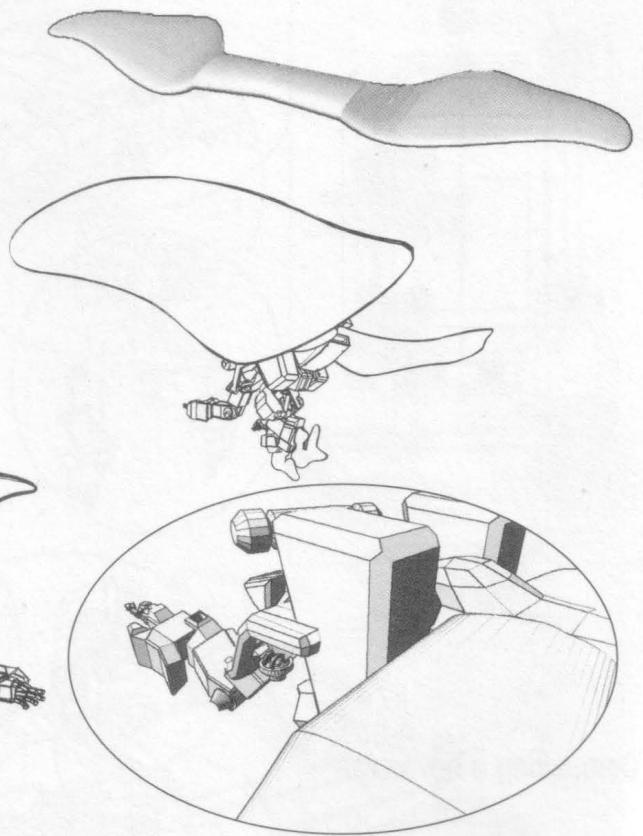
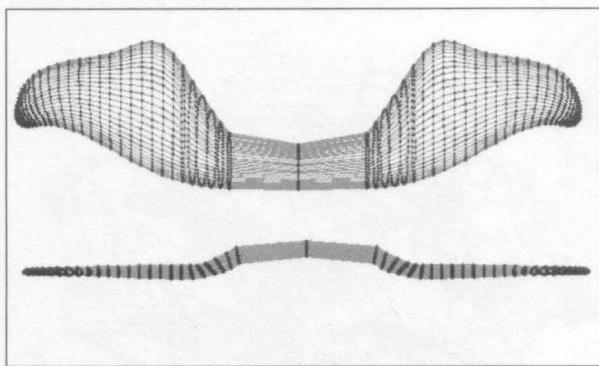
## Flying Robots Swap flying devices with the head to emphasize the primary function of the robot.



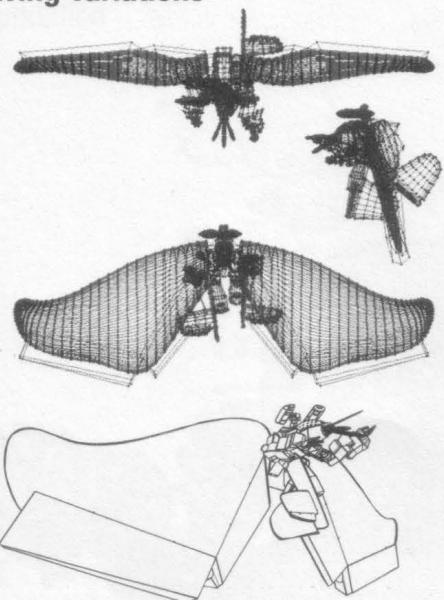
Use basic parts for the chest and arms.



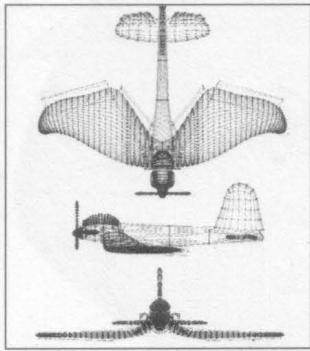
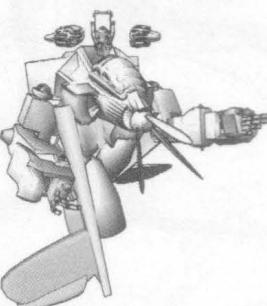
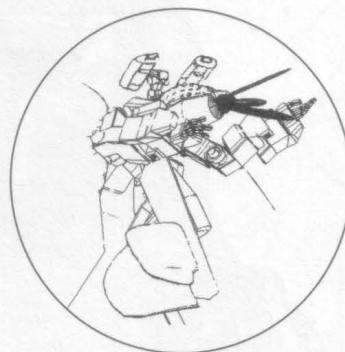
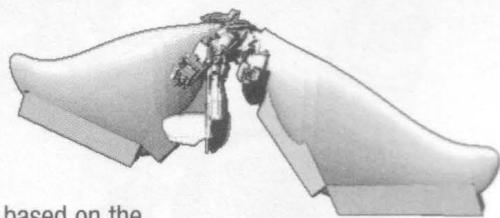
## Attach wings



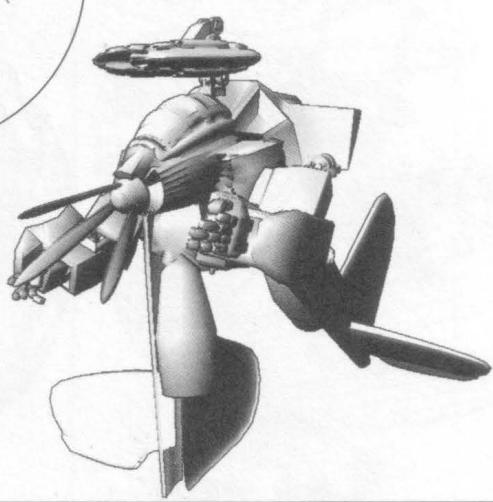
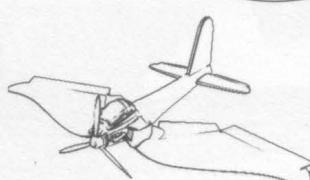
## Wing variations



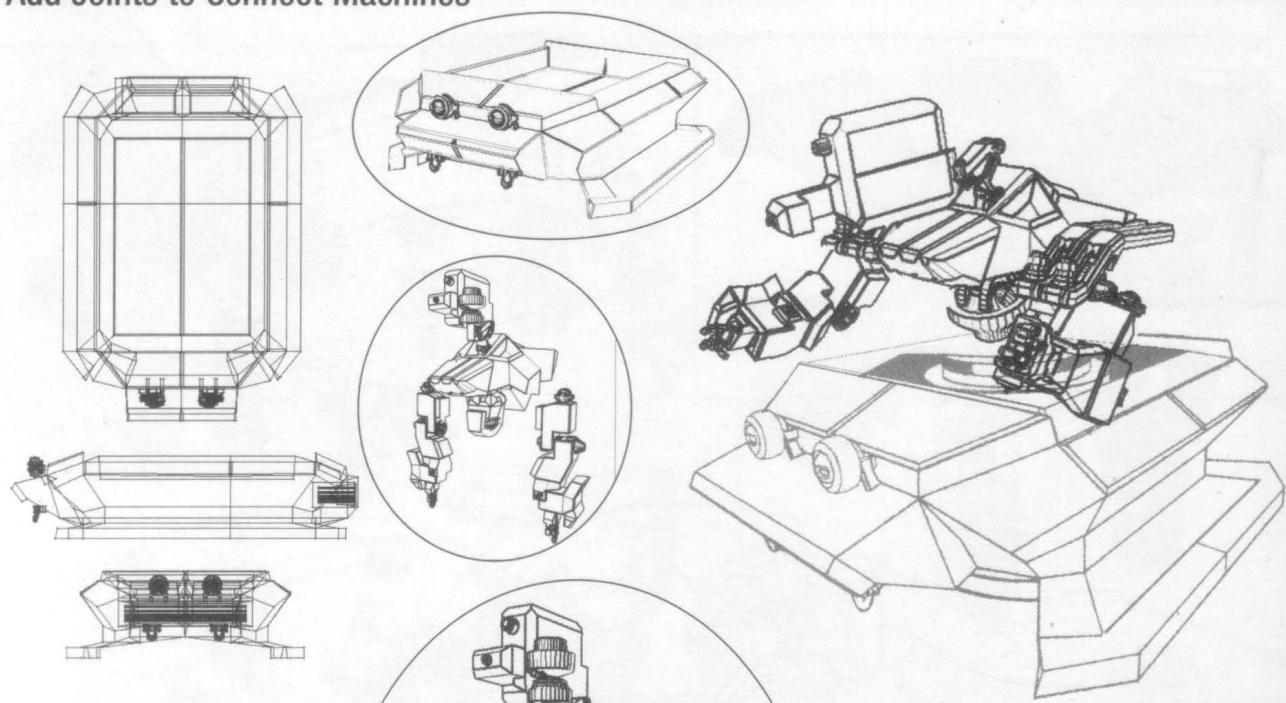
This design is based on the wings of a moth.



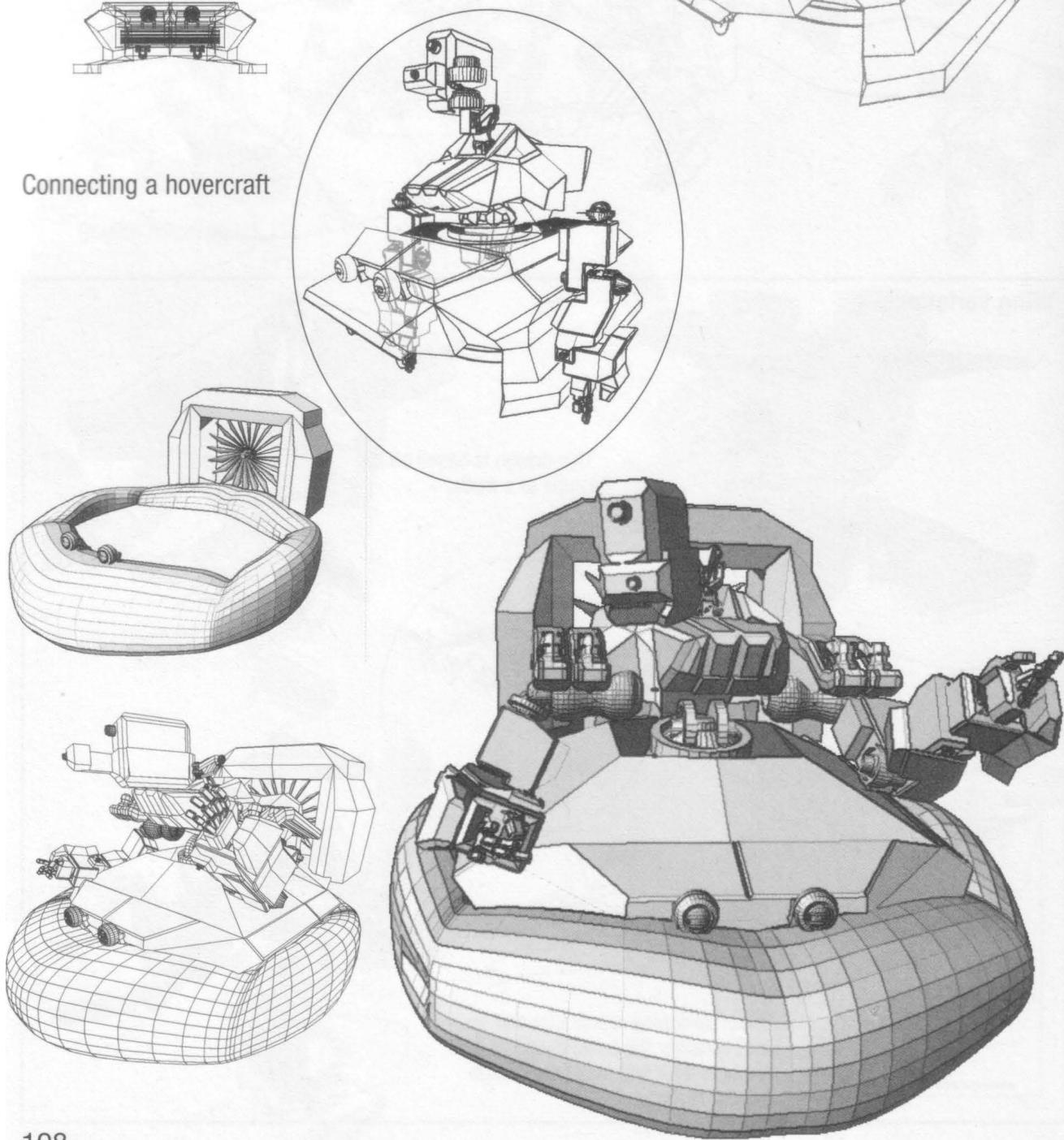
When designing robots that can fly, first consider the basic shape of an airplane. This will make the design appear realistic.



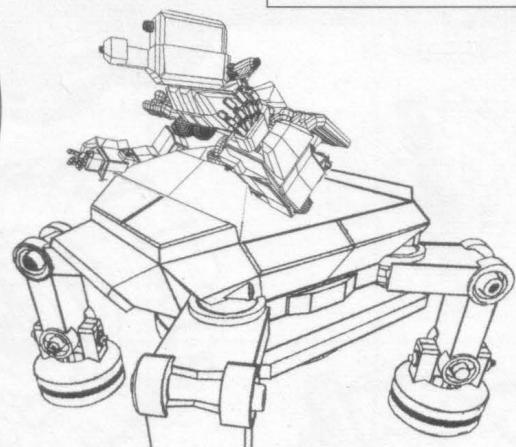
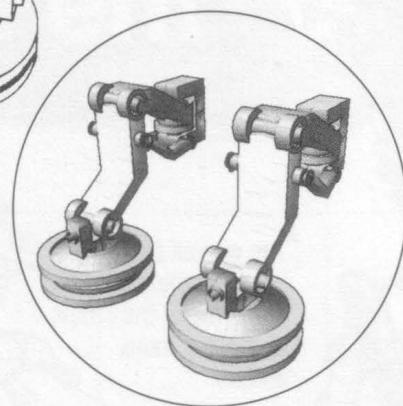
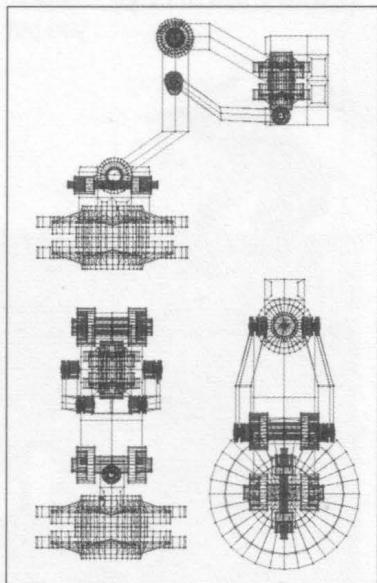
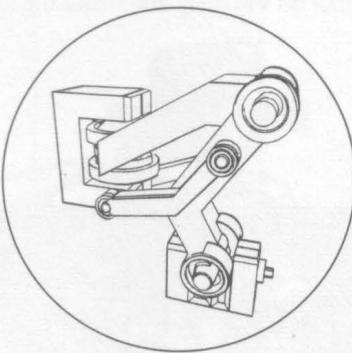
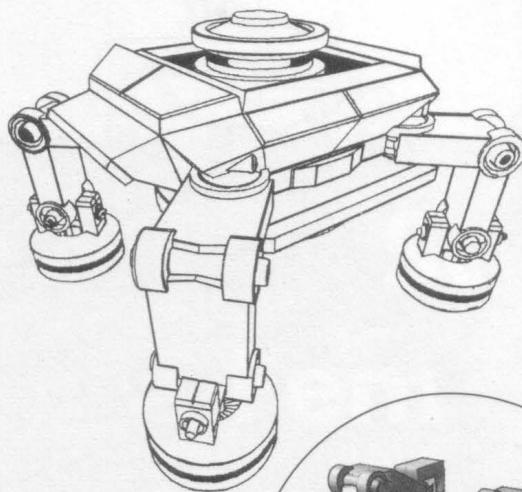
## Add Joints to Connect Machines



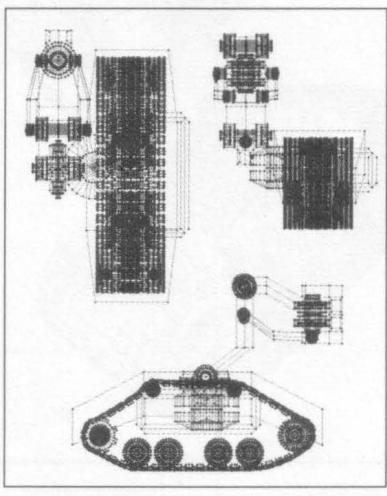
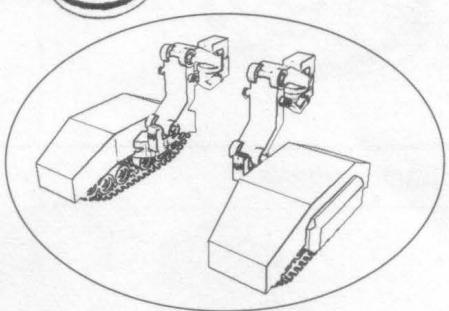
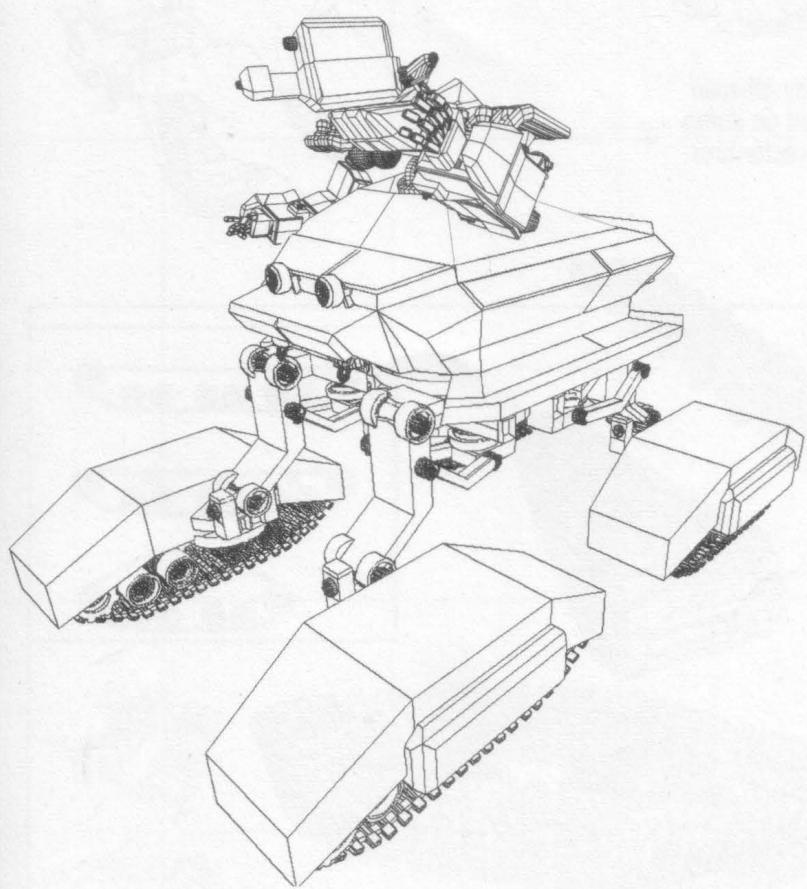
Connecting a hovercraft



Legs connected to a foundation

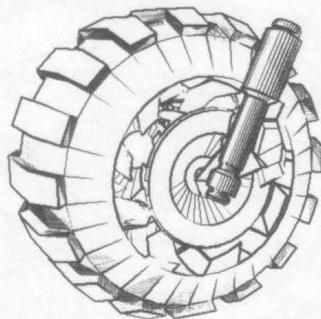
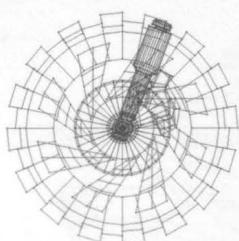
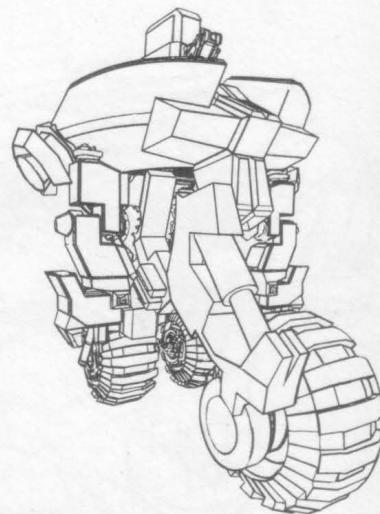
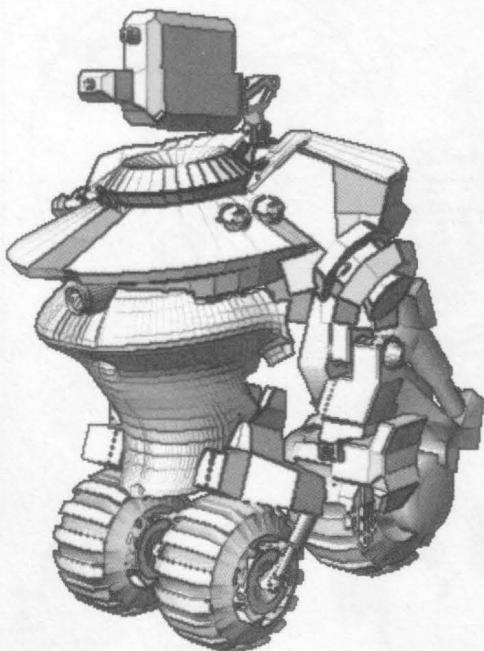
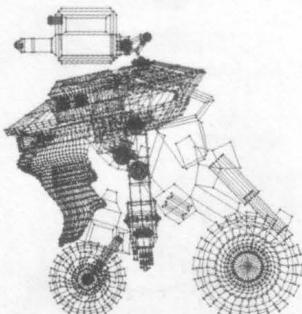


Tractor wheels connected to a foundation

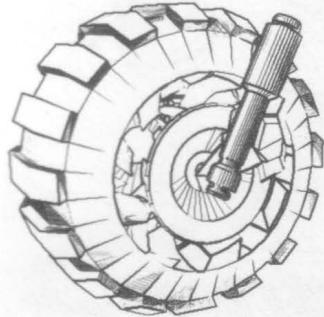


## Robots with Tires

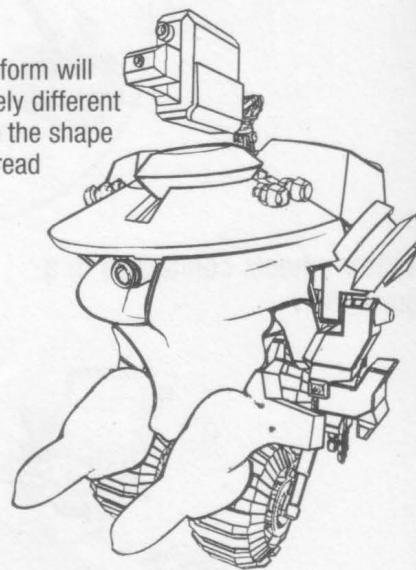
Leave the original head and arms. The robot will look like a completely different machine if you put armor on the body and make the lower body a tire mechanism.



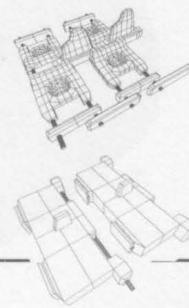
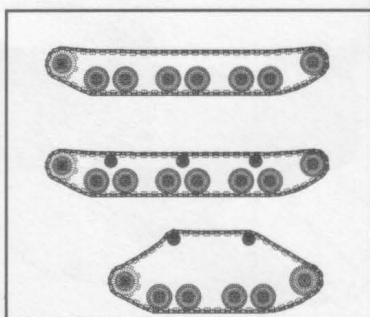
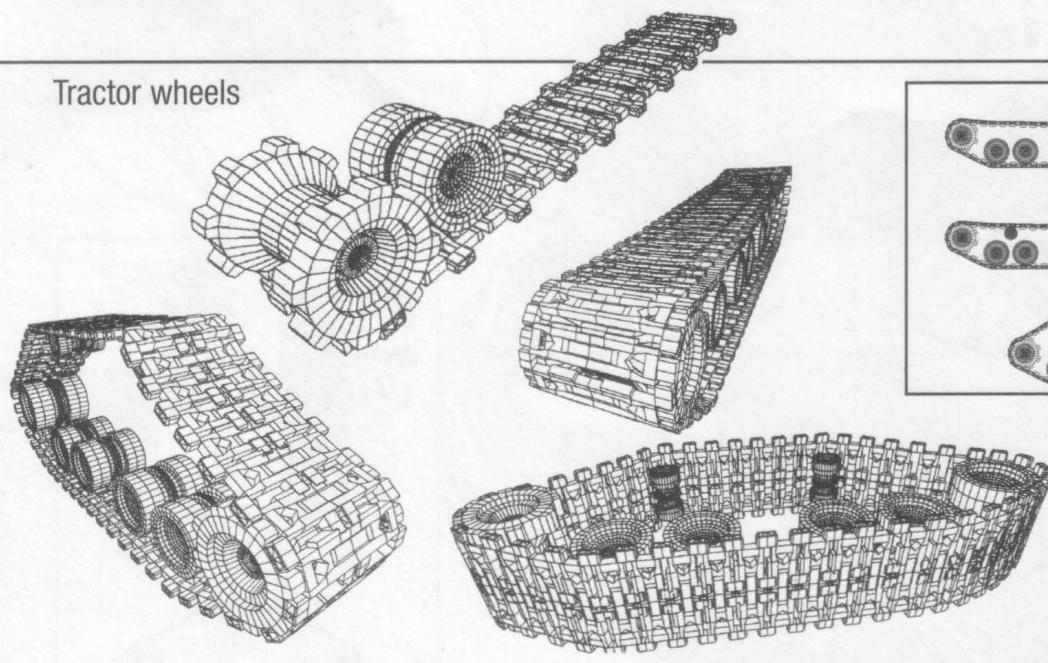
The overall form will be completely different if you make the shape of the tire tread unique.



Heavy-duty off-road tires based on dump truck or tractor tires.



## Tractor wheels



# **Section 3**

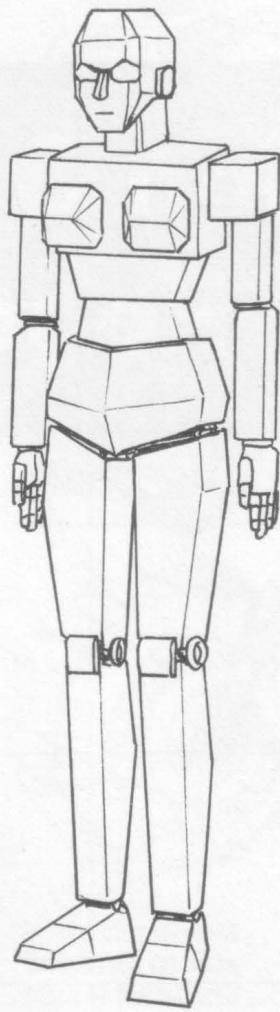
# **Female Robots**

## Designing Body Lines

There are two ways to approach deformation of physical characteristics.

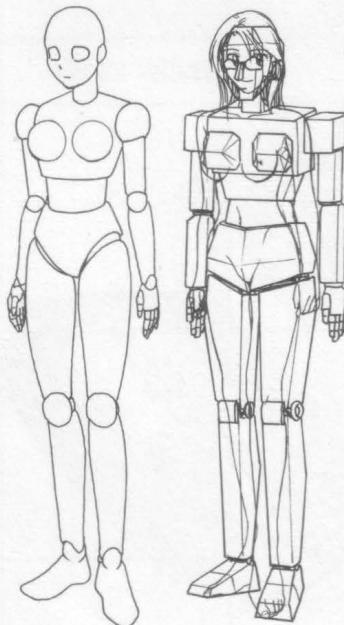
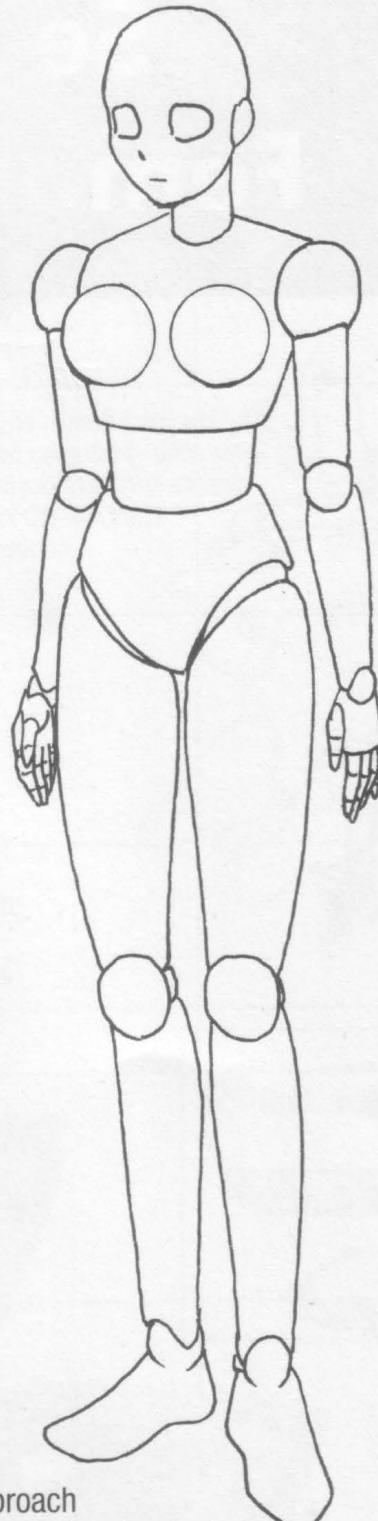


Nude base



### Removing roundness

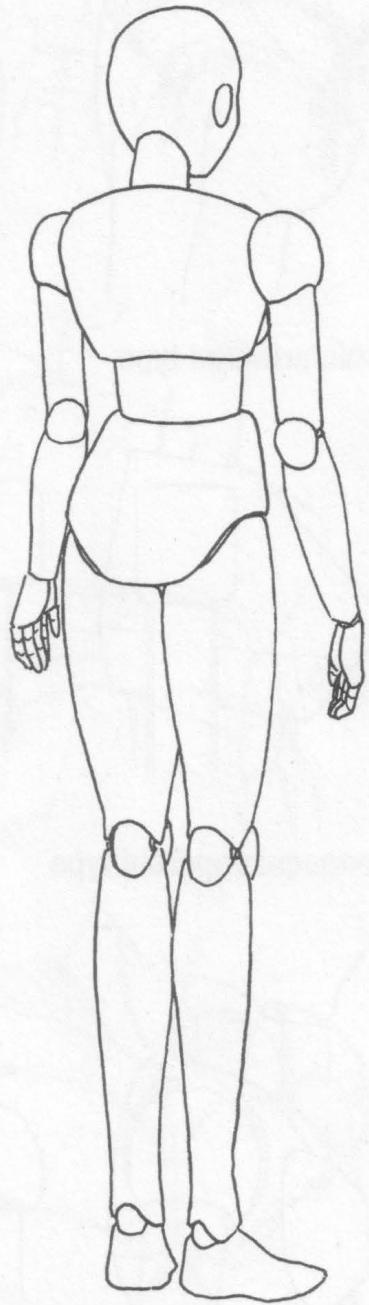
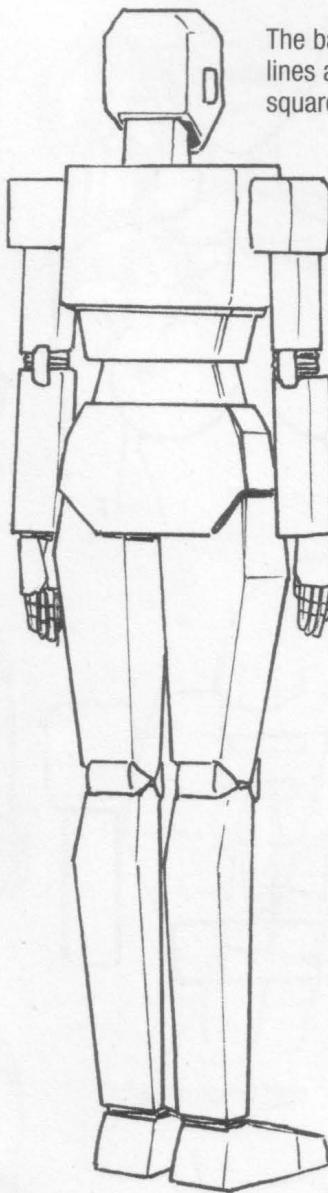
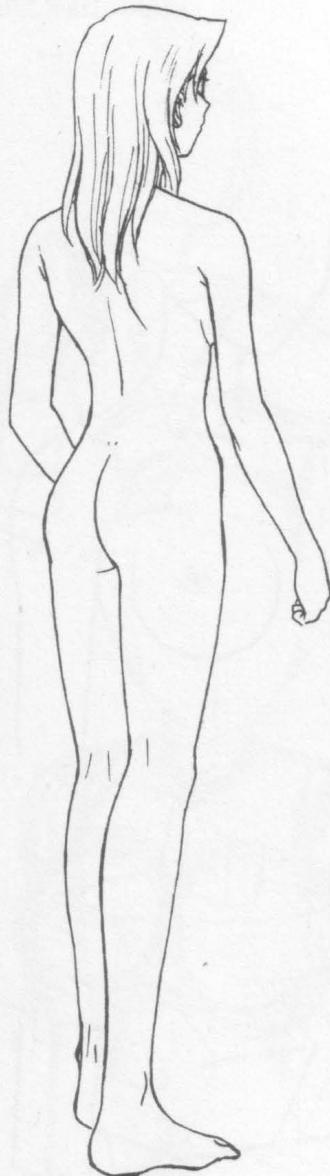
Straight line type. Draw as if the entire body was covered with a combination of iron plates. This creates the look of a classic robot.



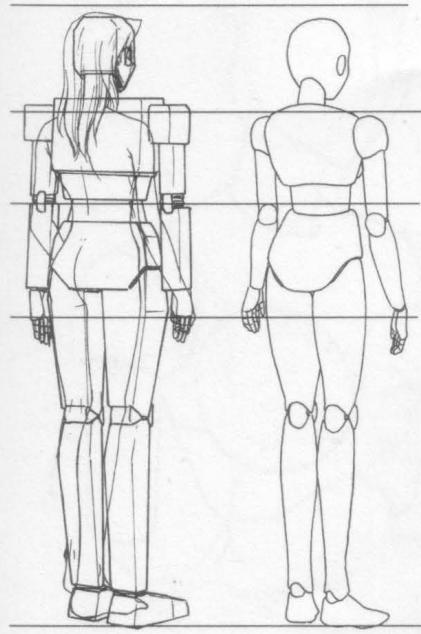
To improve the balance, draw the bust a little higher than it would be in real life.

### Curved approach

Use mainly curved lines to accentuate the curved surfaces and roundness of the body. Look at mannequins or figurines for inspiration.



The back and bottom of robots drawn with straight lines also have no roundness. Make the shoulders square and the hands and feet like prisms.

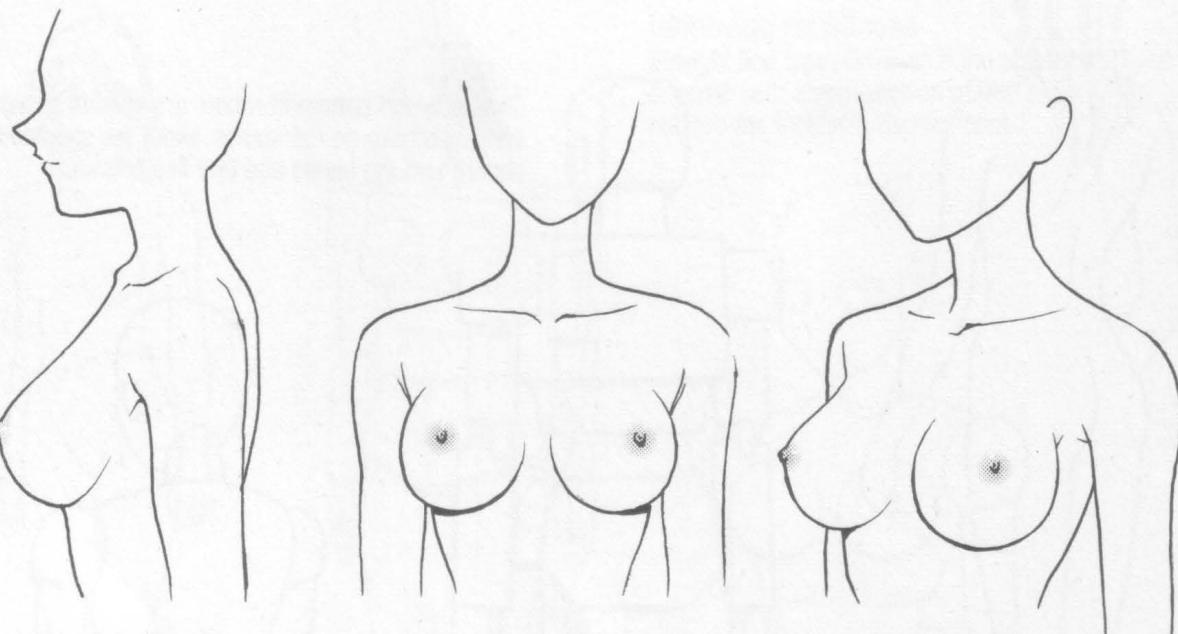


The head of a robot with no hair will look small, so raise the shoulders, hips and bottom to improve the balance.

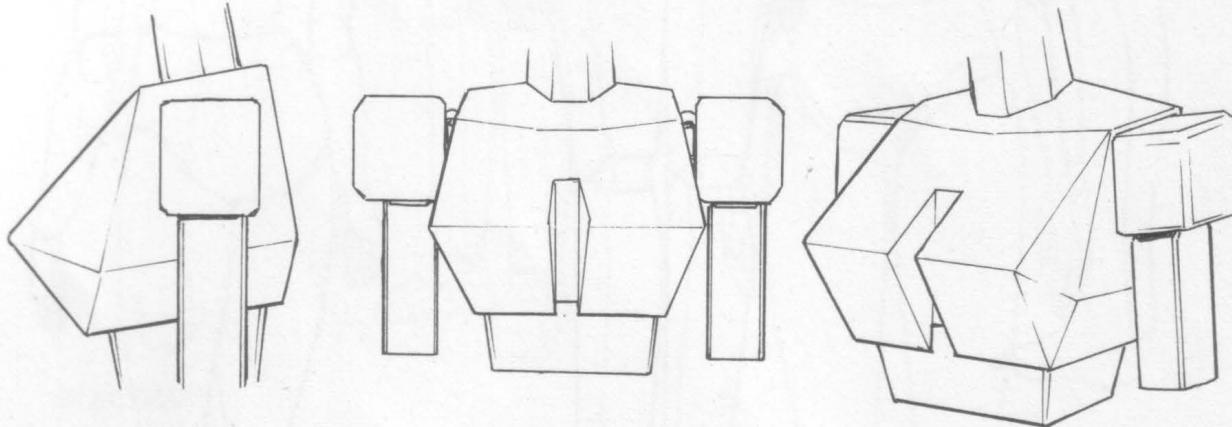
The curved type resembles an artist's sketching mannequin. For a basic design, make the joints and movable parts simple spheres.

## Designing Breasts

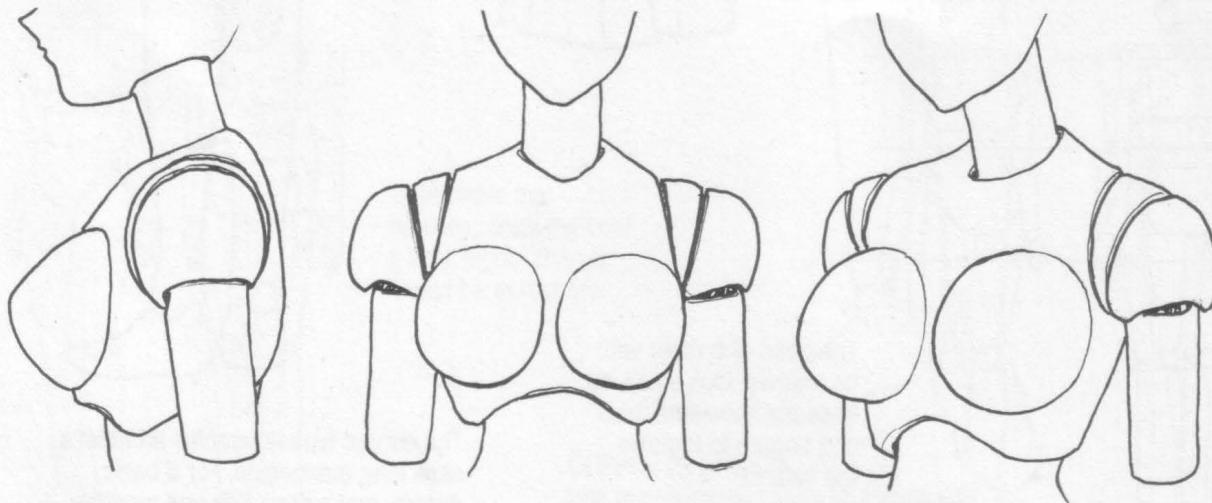
Human



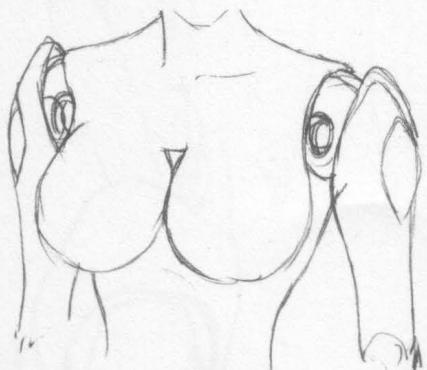
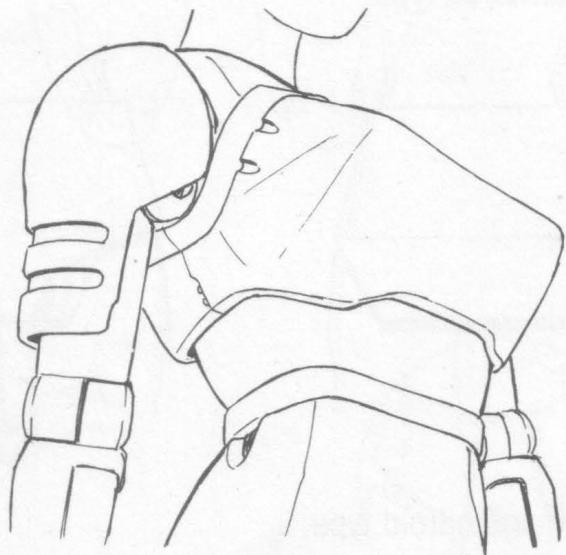
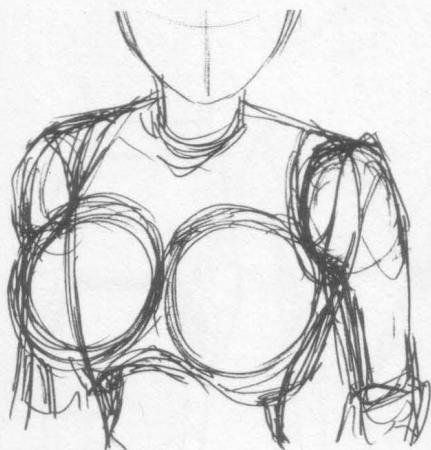
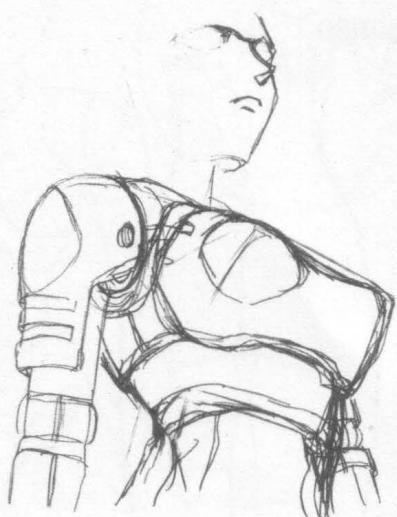
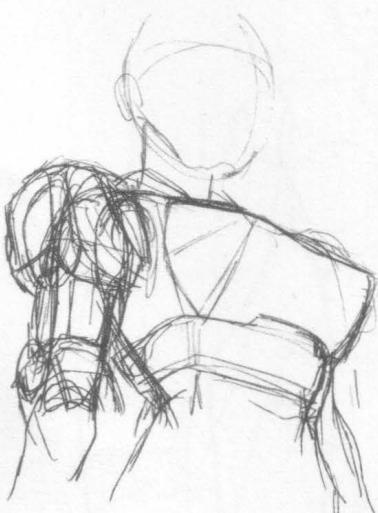
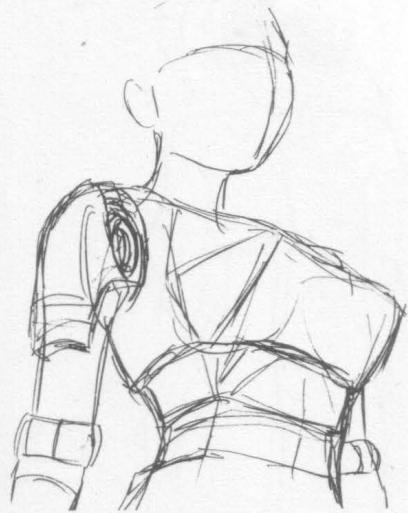
Cubic/armored type



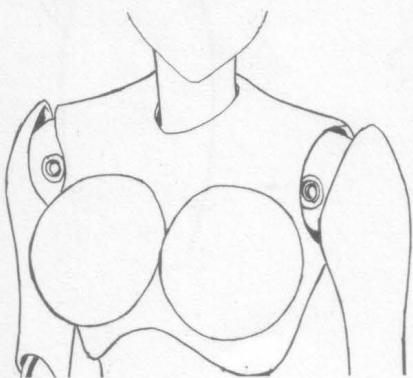
Mannequin/android type



## Bust Variations



Cubic/armored type

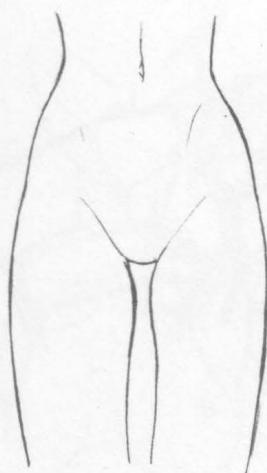
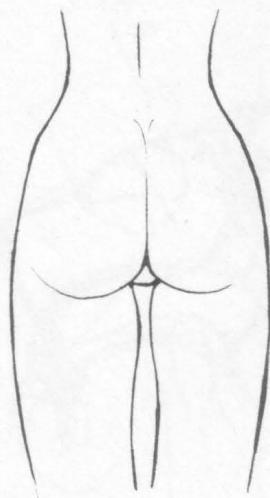


Simple mannequin type

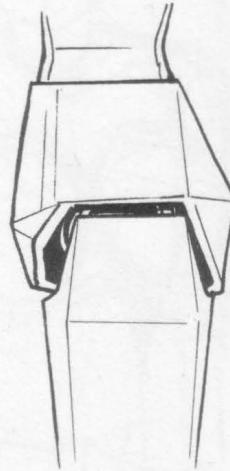
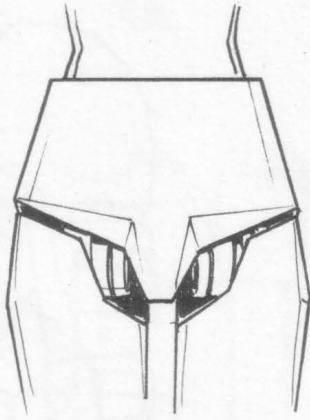
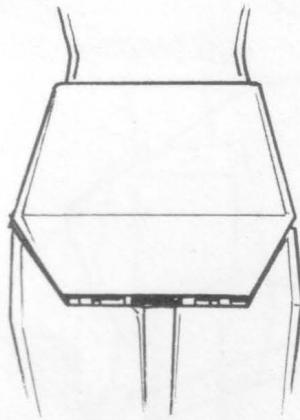
Muscled/biometallic type

## Designing Bottoms

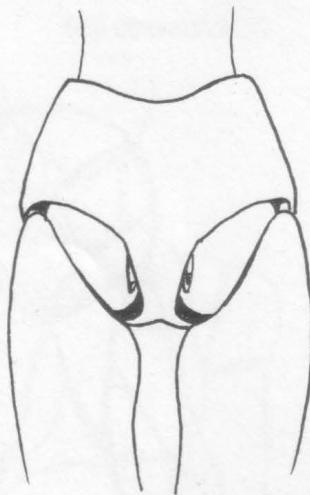
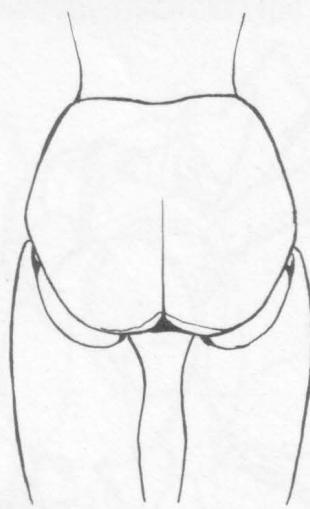
### Human

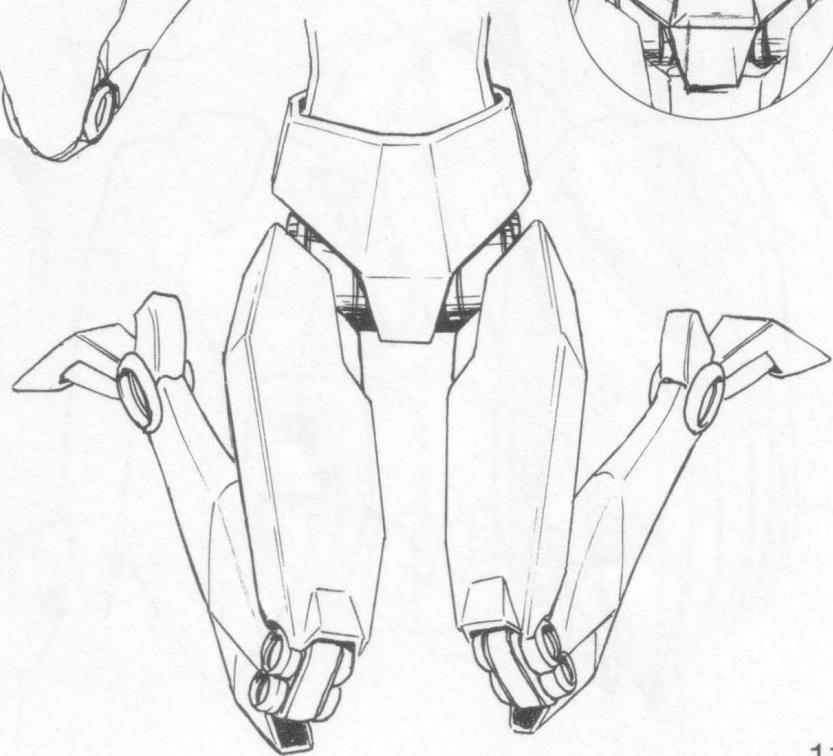
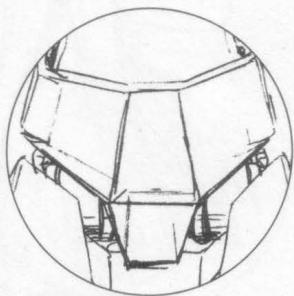
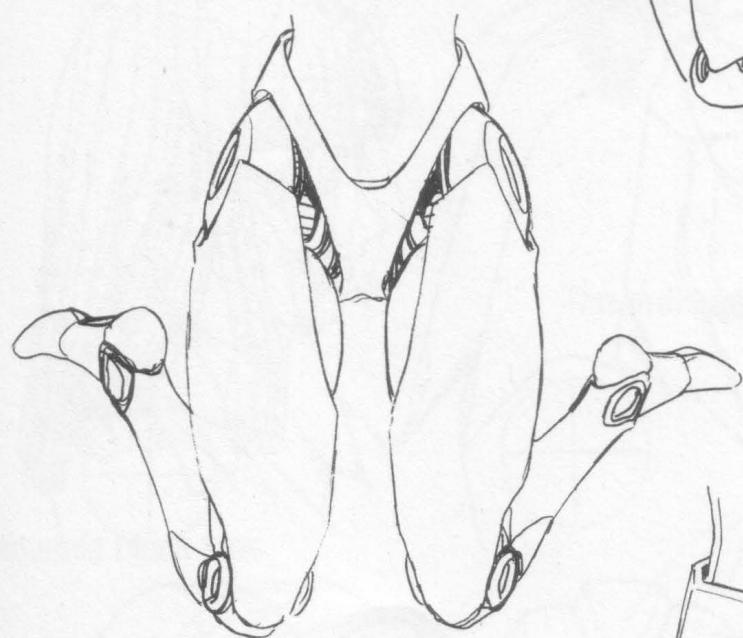
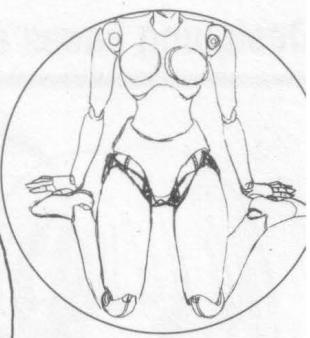
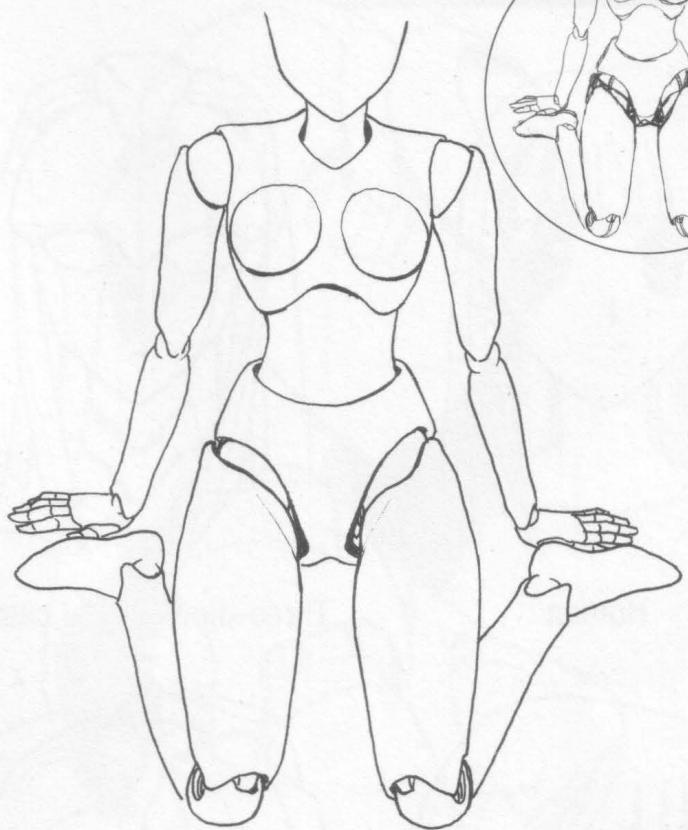


### Cubic/armored type



### Mannequin/android type





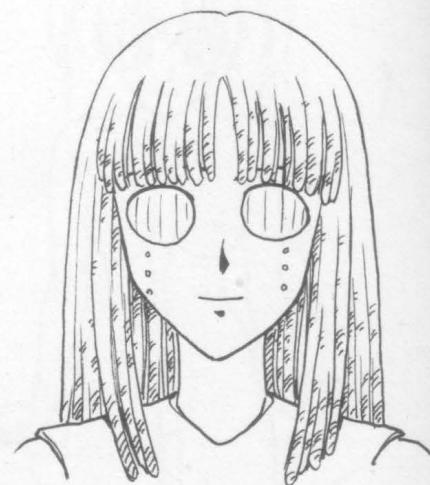
## Designing Faces and Hair



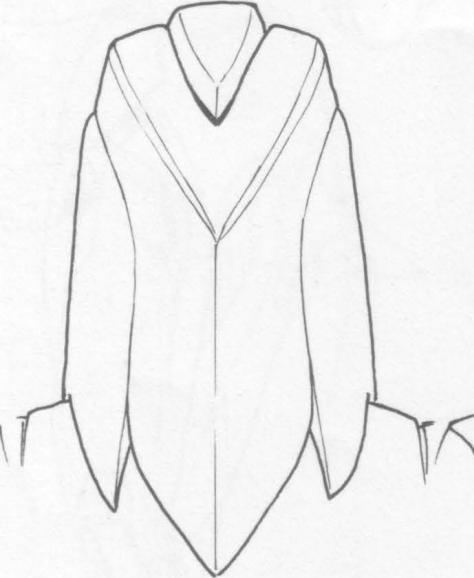
Human



Three-dimensional cast type



Wire/cord type



Human



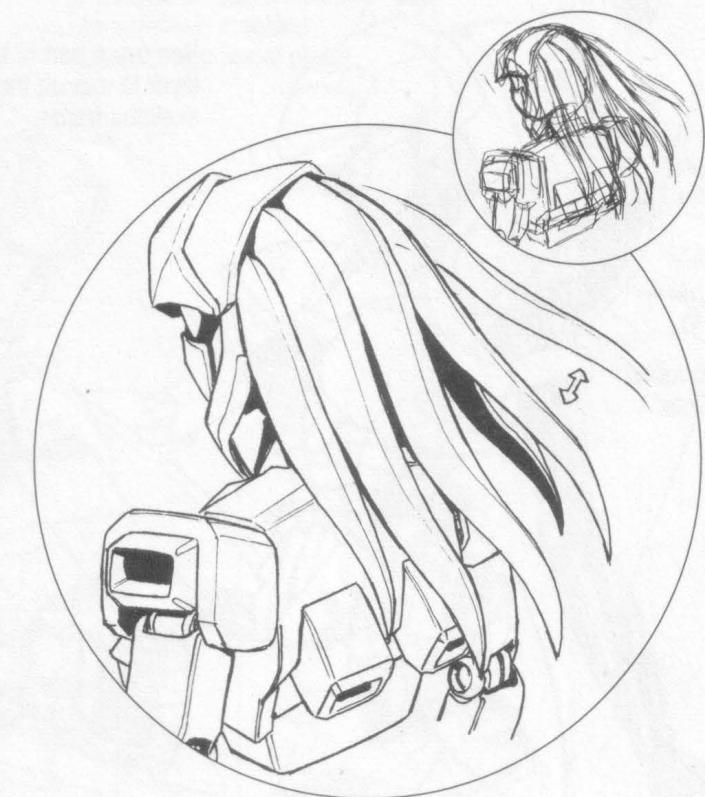
Wire/cord type



Movable block type

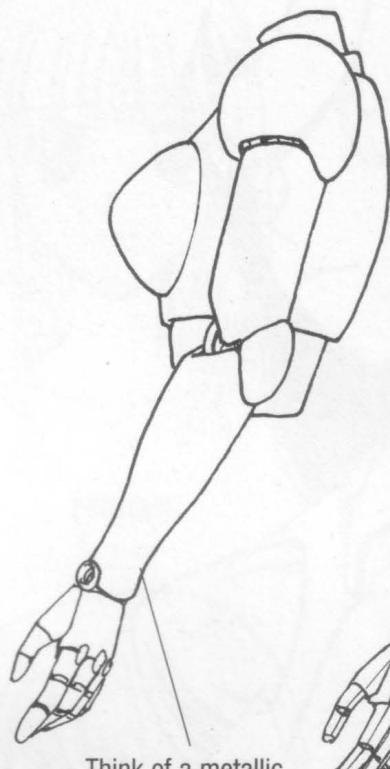


Three-dimensional cast type



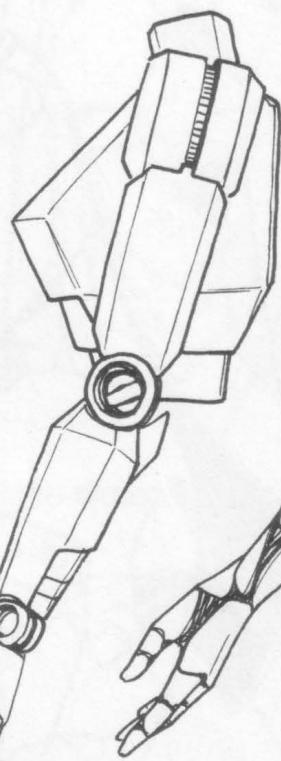
## Designing Body Parts

Mannequin block type

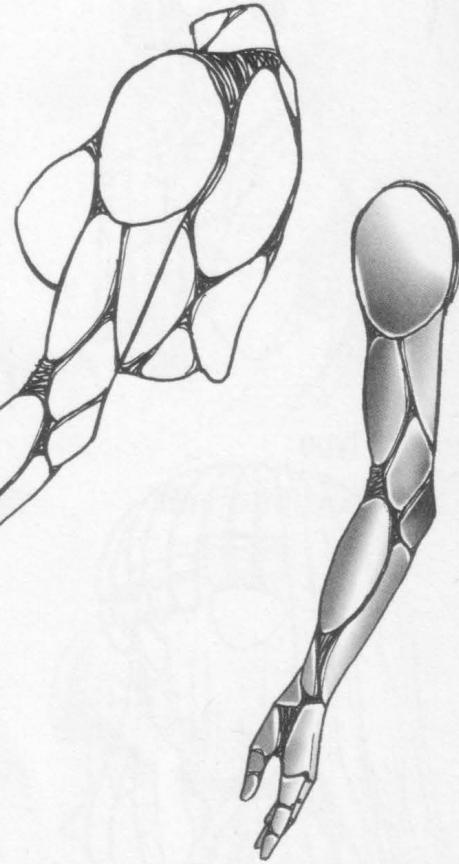


Think of a metallic cylinder.

Robot-like prism type

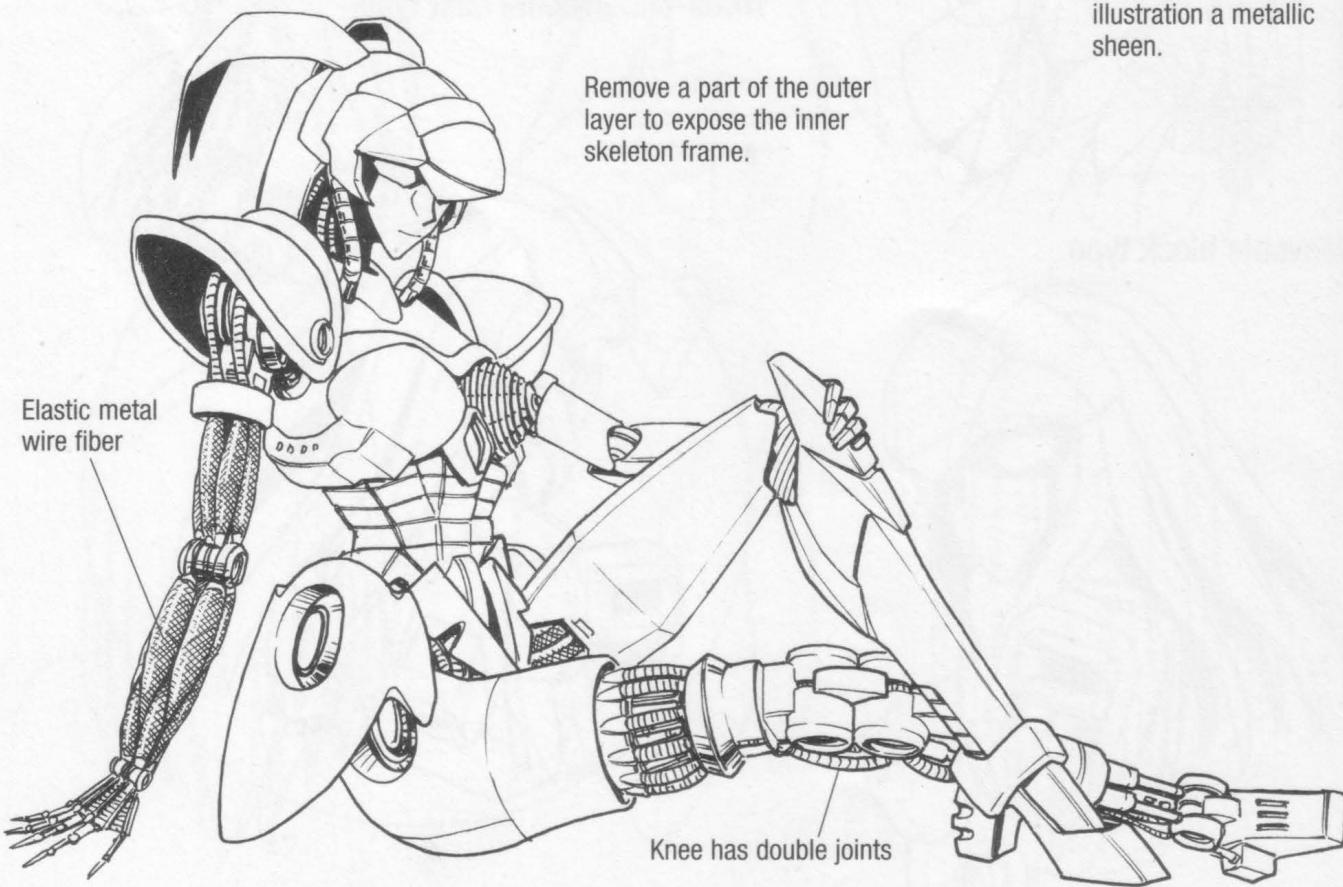


Metallic muscle type



Tones give the finished illustration a metallic sheen.

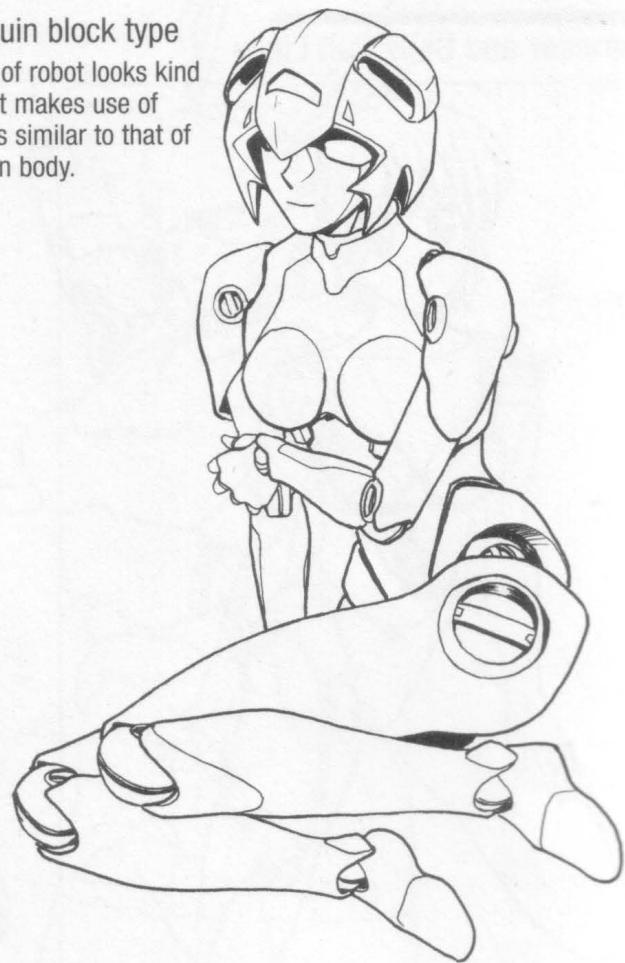
Remove a part of the outer layer to expose the inner skeleton frame.





### Mannequin block type

This type of robot looks kind because it makes use of roundness similar to that of the human body.



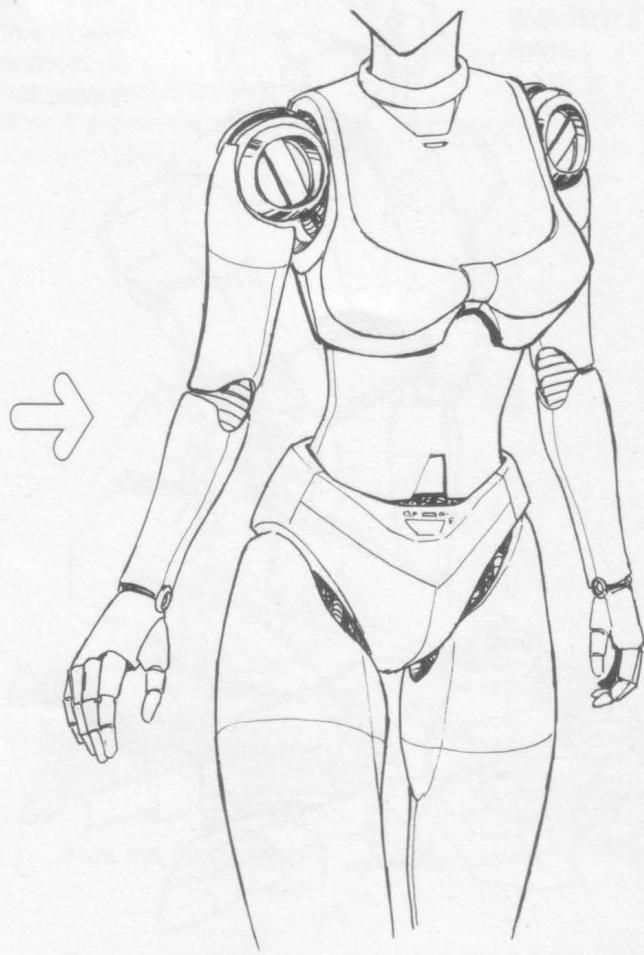
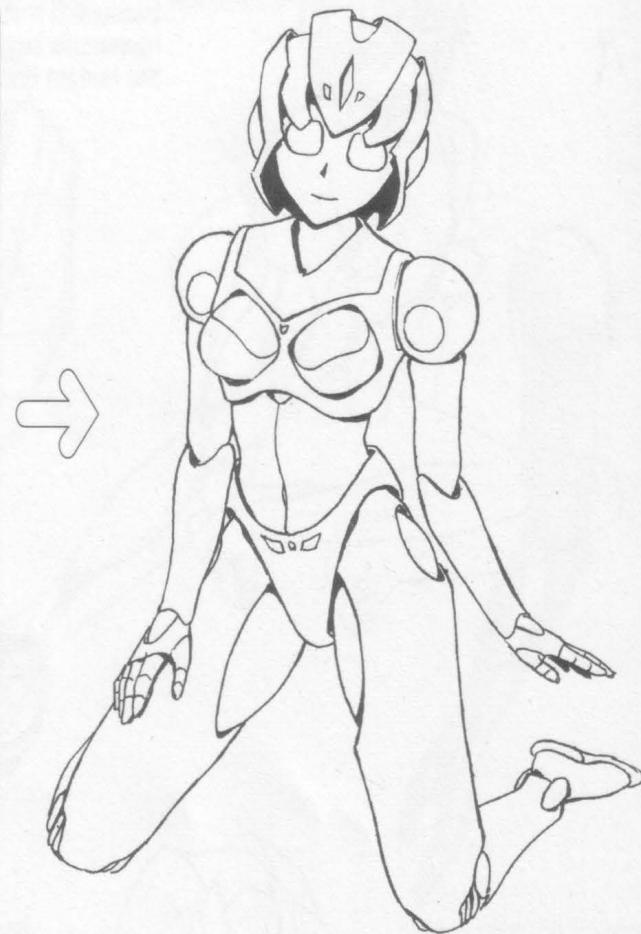
### Robot-like prism type

This type of robot looks like an unrefined machine covered with metal plates.

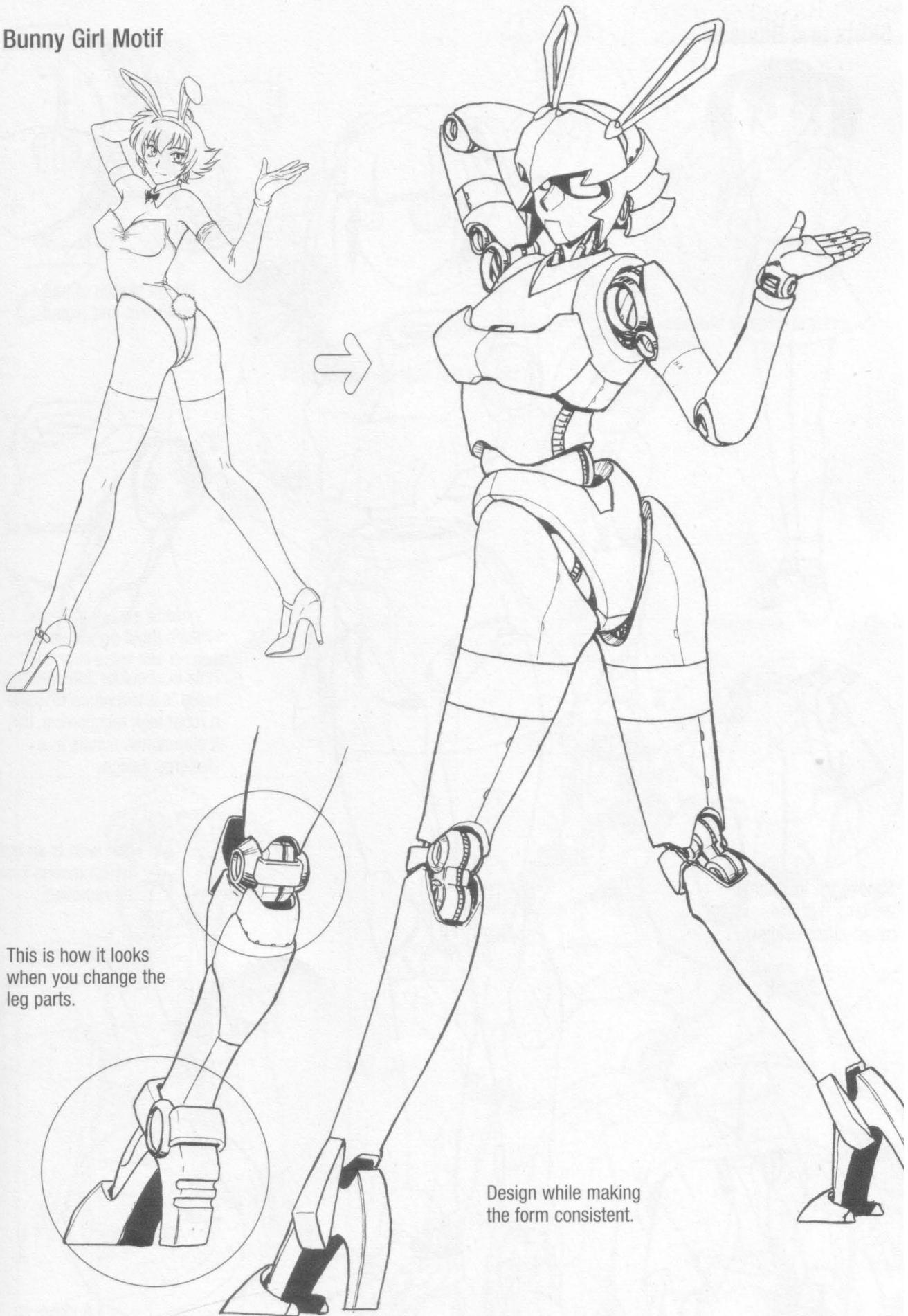


# Design Based on Fashion

## Underwear and Body Suit Lines



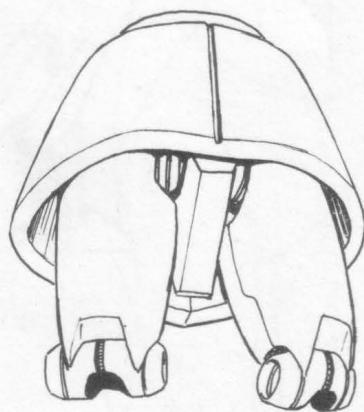
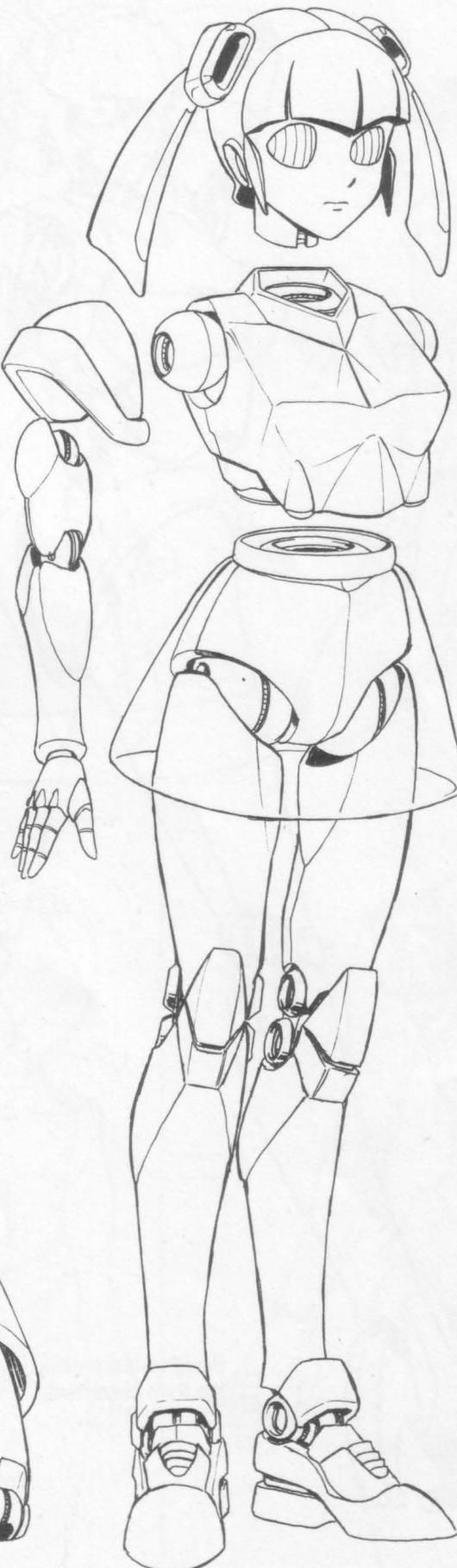
## Bunny Girl Motif



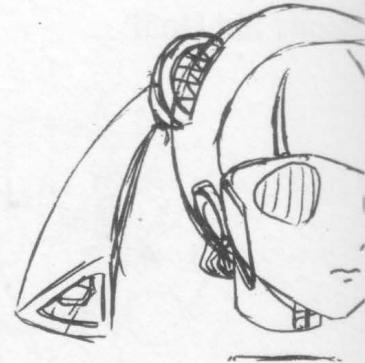
## Skirts and Blouses



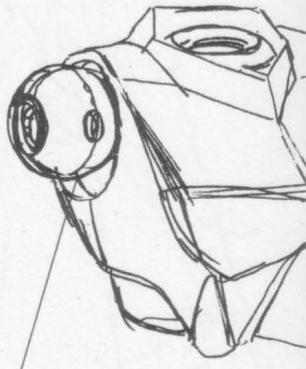
Choose the location of the crotch at the rough-sketch stage.



In this type the skirt and hips are solid.



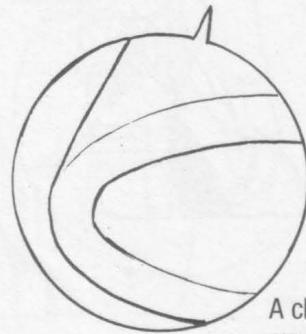
Rough sketch of hair ornament and pigtail



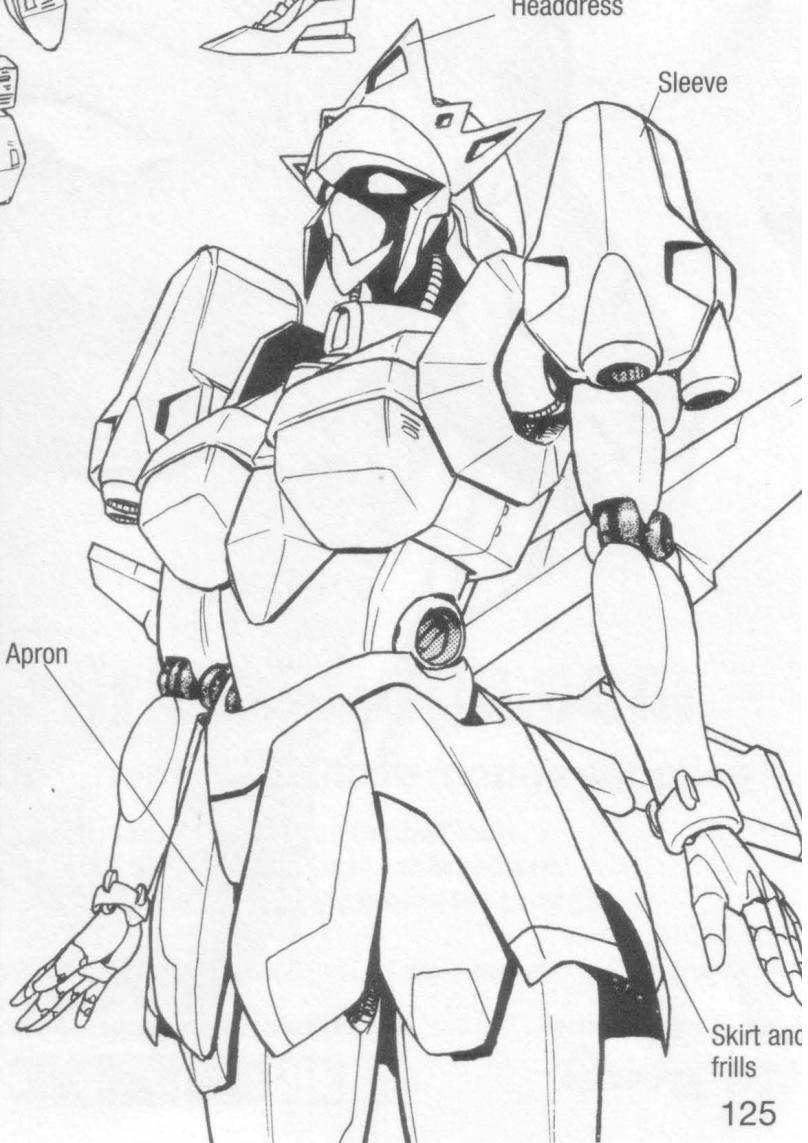
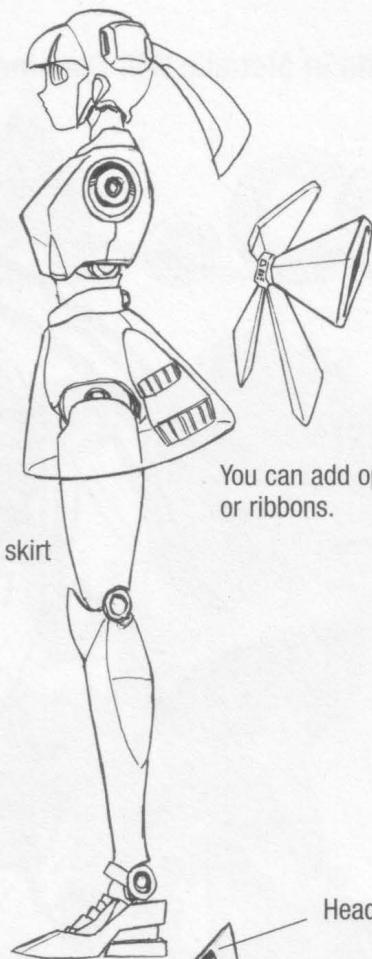
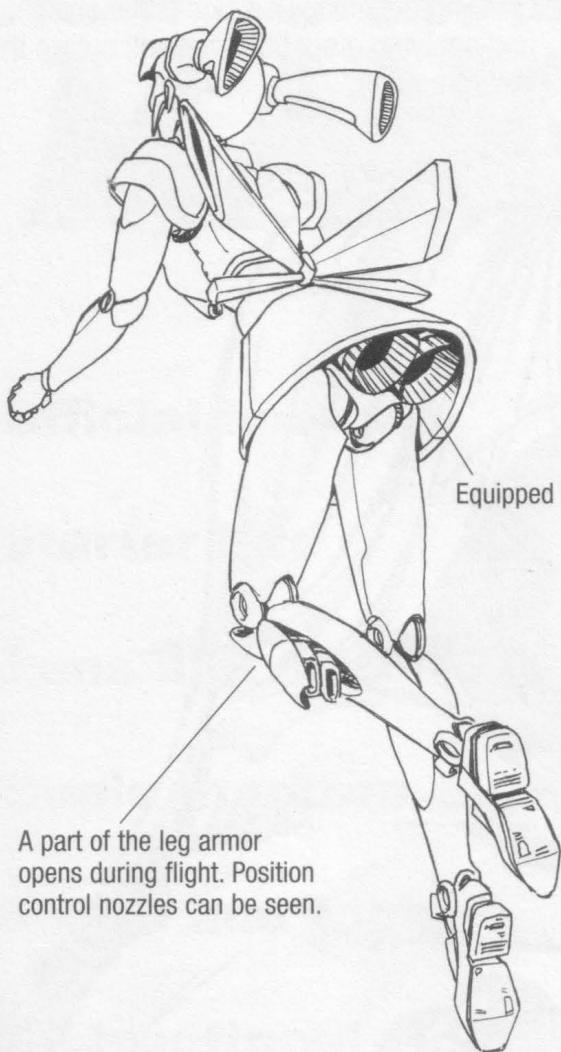
Hole in shoulder joint. Adding holes is a technique to make a robot look mechanical, but it sometimes results in a cluttered design.



The skirt is an option, which means it can be removed.



A close-up reveals the thickness of the metal.



A robot based on a maid outfit will become a maid robot.

**A Character Done in Metallic Will Become a Robot.** Drawing reflections on skin (solid shading) and applying gradation tone will create the feel of a robot.



Original illustration



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